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# DOMESTIC ENGINEERING

Whole No. 903, Vol. LI, No. 1. $2 a Year. Chicago, Ill. April 2, 1910.



"HIGH GRADE TOOLS FOR HIGH GRADE WORKMEN"

## LOOK AT THESE BUFFUM TOOLS

And not only at the illustrations but at the descriptions underneath them.

Here you get Plumbers' Tools that are **right**—in design, materials, workmanship.

Plumbers insist seeing the name "Buffum" on the handles of the tools they purchase because they appreciate the **correctness**, the **absolute correctness** of any "Buffum" for any specific work.

Dealers stock "Buffums" well and take advantage of **every** opportunity. Progressive merchants find this line a trade winner. Goods are carefully inspected and put up in nice packages, generally one tool to a package. The prices given here are the retail prices. We make special discounts to dealers.

**AND BY ALL MEANS DO THIS—**

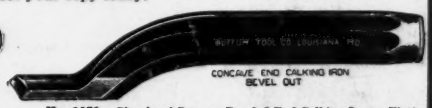
Send at once for our Catalog of Plumbers' Tools, showing exactly 300 different styles and sizes, excellent illustrations, good descriptions—a doughty book doing justice to fine goods. All live jobbers carry Buffum Tools. Ask for them—and see they don't substitute.

Plumbers! Dealers! Purchasing Agents! Send for your copy today.

**No. 1666.** Plumbers' All Steel Handle Wood Gouge, cutting edge half round. First grade. Polished ends. On account of the hard service given these tools, they are made entirely of steel and of a good quality. No wooden handles to split or get loose. Made with the bevel on inside of chisel. Sharpened ready for use. Special sizes made to order. **Price, $0.65.**

**No. 30.** Diamond Point Chisel, of the very best grade of Tool Steel. Polished end. **Price, $0.18.**

**No. 1685.** Plumbers' Spring Yarning Iron. First grade. Polished end. **Price, $0.75.**




**No. 1671.** Plumbers' Concave Beveled End Calking Iron. First grade. Polished ends. Two styles; on one the edge bevels out; on the other the edge bevels in. **Price, per pair, $1.00.**

**No. 1773.** Ceiling Calking Iron. **Price, $1.00.**

**No. 407.** Burner Pliers, drop forged from a good grade of Tool Steel, carefully made and well finished. **Price, $0.40.**

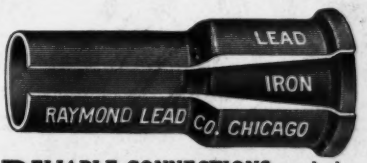
**BUFFUM TOOL COMPANY, LOUISIANA, MO.**

GLAUBER
THEY NEVER LEAK
ONLY BRASS GOODS GUARANTEED FOR FIVE YEARS
CLEVELAND AND NEW YORK

**IN A CLASS BY THEMSELVES**

**NECESSARY FOR THE BEST JOBS**

**AND BEST IN THE END FOR COMPETITION JOBS**



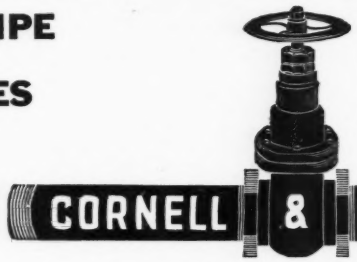

**RELIABLE CONNECTIONS** made between Lead and Iron Pipe by using the Raymond Ferrule—the only Lead Ferrule on the market which has an **extra thickness of lead over the shoulder,** giving strength where it is needed and where other ferrules are weak. The genuine article bears our label.

**RAYMOND LEAD CO.,** CHICAGO, ILLINOIS

**Crosby** Spring Seat Globe and Angle **Valves** All Parts Interchangeable. All Parts Removable. Tested for Highest Pressures **Leak-Proof** CROSBY STEAM GAGE & VALVE CO. Boston New York Chicago


INDEX TO CONTENTS PAGE 323 INDEX TO ADVERTISERS PAGE

**WROUGHT PIPE**
**BOILER TUBES**
**FITTINGS**
**COCKS**
**VALVES**



**CORNELL & UNDERHILL**
**NEW YORK**

**Supplies and Specialties for Steam, Water, Gas, Oil and Ammonia**

***Office, Warehouse and Shops:***
**34-45-47 Beach Street**
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***Pipe Yard:***
**Corner West and Houston Streets**

## Ever Use This

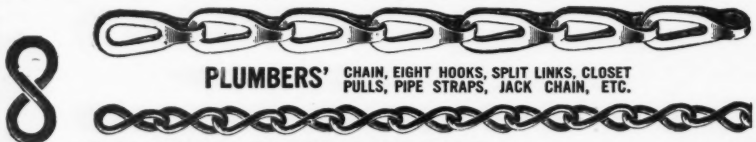
For joints of gas, water, steam or air piping nothing equals Dixon's Pipe-Joint Compound. It makes tight joints but never sets.

Joseph Dixon Crucible Co., Jersey City, N. J.

## Sample Can Free

If you want to test Dixon's Pipe-Joint Compound for yourself, write to us for free sample can No. 37-D—You'll like it.

Joseph Dixon Crucible Co., Jersey City, N. J.



**PLUMBERS'** CHAIN, EIGHT HOOKS, SPLIT LINKS, CLOSET PULLS, PIPE STRAPS, JACK CHAIN, ETC.

**WRITE FOR CATALOGUE OF**
**Plumbers' Specialties**

**THE SMITH & EGGE MFG. CO.** **BRIDGEPORT, CONN.**

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**PRESSURE AND VACUUM GAUGES**
**FOR ALL PURPOSES**

**INDICATING AND RECORDING INSTRUMENTS**
**STEAM SPECIALTIES**

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**Iron Casting,** specified by leading Architects and by those familiar with the most practical devices of this kind.

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**R. Estabrook's Sons**
Cor. First and C Streets,
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## HOMESTEAD VALVES

Straightway, 3-way and 4-way
**Homestead Valve Mfg. Co.,** **Pittsburg, Pa.**

We Manufacture VALVES for
**The Principal Railroad Systems, Steamship Lines and Water Works.**
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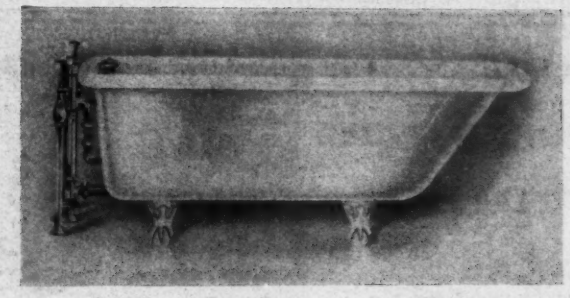
**REGULATING VALVES**
**STEAM WATER**
**FEED WATER FILTERS**
**for Land and Marine Boilers.**

# "UNION"



# Look for the Quality Mark

"UNION" Sanitary Enameled Ware is noted for perfect designs, its unequaled purity of color, reliable quality and fine trimmings.

*Write for Catalogue showing designs*

**Union Sanitary Manufacturing Co., Noblesville, Ind.**

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**HOT WATER HEATERS**
**STEAM BOILERS, RADIATORS**

*THEY GIVE COMPLETE SATISFACTION.*

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# Your Customer Will Advertise You

If you sell him a heating plant that is *automatic.* You can make it so by using *the Powers Regulator.*

The regulator that is really *automatic.* Doesn't have to be wound up. No batteries. Adds 20 per cent to the capacity of a hot water plant, and saves 25 per cent of the fuel. Write for catalogue.

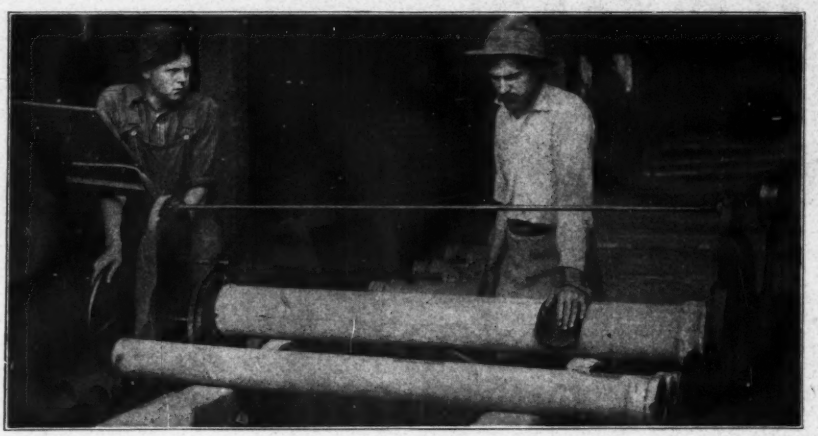
**The Powers Regulator Co., 42 Dearborn St., Chicago**

Kindly quote "Domestic Engineering" in writing advertisers.

# "U.F.CO." SOIL PIPE

**will not break or split easily**

IT IS



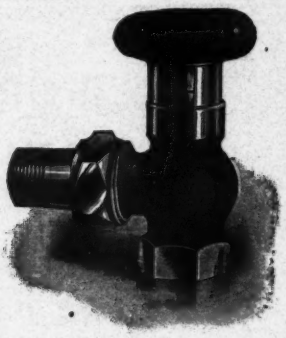
## Mechanically and Chemically Tested

daily during its manufacture to insure a strong, tough, even grade of pipe that will stand rough handling and cutting without loss. It is a most satisfactory pipe for every requirement. We make over 1,500 styles and sizes of pipe and fittings; also fittings to your order. We are prepared to make prompt shipments in any quantity.

**UNION FOUNDRY COMPANY, Anniston, Alabama**

Manufacturers of Everything in Soil Pipe and Fittings, 2 to 12 Inch

# Atmospheric System of Steam Heating



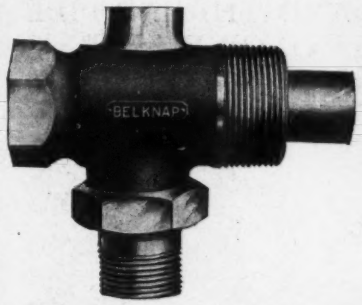
is one of the most popular systems for heating residences, public buildings, churches, offices, etc. It is without question the most flexible and easily controlled of any system, and experiments prove it to be the most economical—heat bills having been reduced 25 to 35 per cent. If interested, write for free bulletins and information.

Estimates Furnished

**"Adsco" Graduated Radiator Valves**

## American District Steam Co.

Lockport, N. Y. North Tonawanda, N. Y. Chicago




# The Belknap Expansion Tank Circulating Coupling

Used in connecting with the expansion tank

## Saves Four Joints

which means an important saving of material and labor. Allows you to under-bid competitors and at the same time put in a more satisfactory job.

*WRITE FOR PRICES AND DISCOUNTS*

**BELKNAP MANUFACTURING CO., - Bridgeport, Conn.**

*SOMETHING ENTIRELY NEW IN*

## SILL-COCKS

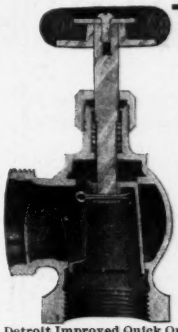
STYLE N

Semi-Finished, Polished aluminum wheel Style N. Style O---Heavy rough pattern built for service.

Both shown in Catalog D.

STYLE O

*KINSEY & MAHLER CO.* *PEORIA, ILL.*



Detroit Improved Quick Opening Hot Water Radiator Valve

You Can Identify The Genuine

## "DETROIT" RADIATOR VALVE

**BY THE TRADE MARK**

Imitation is the most sincere tribute ever offered to superiority, so look out for "just-as-good" substitutes.

Whether you use or sell radiator valves in small or large quantities, we want you to have our new valve catalogue, "A 36". We will mail it promptly on receipt of request.

TRADE MARK Reg. U.S. Pat. Off.

**DETROIT LUBRICATOR COMPANY, DETROIT, U. S. A.**

THE

# ARMSTRONG MANUFACTURING CO.

**284 Knowlton St., BRIDGEPORT, CONN.**

**NEW YORK OFFICE: 248 Canal Street** **CHICAGO OFFICE: 171 N. Jefferson Street**

# Genuine Armstrong Stocks and Dies

## PIPE MACHINES

FOR CUTTING OFF AND THREADING PIPE OR BOLTS

**Hand or Power**

## HINGED PIPE VISES

BARD ADJUSTABLE
BUSHINGS
NIPPLE HOLDERS
RATCHET ATTACHMENTS
PIPE CUTTERS

**CATALOGUE** **Mailed on Request**

## Notice the Two Biting Surfaces

OF THE

# IDEAL WRENCH

**It is a BIG feature.** The outer grips pipe or flat surfaces; the inner, wide V-jaws grip round or square beaded fittings, valves, flanges, etc., of every description. Detachable chain with no special link or riveted pin to drive out. Quick adjustment, very powerful. Made of tool steel. Fully guaranteed.

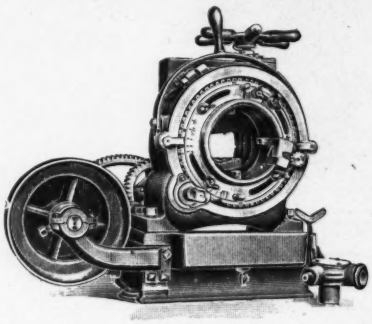
Ask your jobber or write for illustrated booklet.

**Kroeschell Bros. Co.**

470 W. Erie St., Chicago

TO CUT AND THREAD PIPE BY HAND OR POWER

## The Forbes Patent Die Stock



Why take four or five men to do a pipe job that one man can handle easily?

Labor is too costly to make such a course profitable.

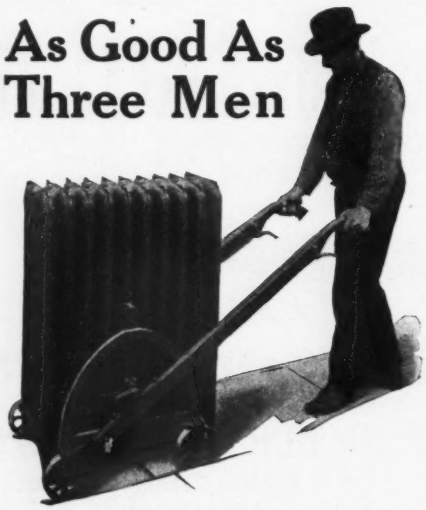
The machine shown in engraving is a combined Hand and Power Machine and can be used as a power tool or can be removed from base, when desired, and used as hand machine on outside work.

**Ask for the latest catalogue of Pipe Cutting Machinery**

**THE CURTIS & CURTIS COMPANY**

**25 Garden St. Bridgeport, Conn.**

## As Good As Three Men



**One man with the help of an Armstrong Radiator Truck can "walk away" with a radiator that four men would have trouble in carrying.**

**Any standard radiator regardless of size can be lifted and moved without balancing by one man.**

**Each truck tested and guaranteed. Shipped on 10 days' free trial. From your jobber or direct to you.**

**Osoeze Manufacturing Co.**

**1432-34 West Fort St., DETROIT, MICH.**

## Pipe Vise and Stock Combined

# The CLIMAX

## RATCHET STOCK

**is an indispensable tool for conveniently threading iron pipe in ditches, under floors, in corners, overhead, etc. This tool is provided with a Strong vise which securely grips the pipe, and by means of the leading thread the die is forced on pipe and the thread is cut. Light in weight, convenient to carry. The advantages of this tool make it absolutely indispensable to Plumbers, Steam and Gas Pipe Fitters, Machinists, etc. Dies are extra if furnished.**

No. 1 threads ¼ to 1 inch pipe.
No. 2 threads 1 to 2 inch pipe.

**For Sale by Leading Jobbers.**

**For Armstrong Dies**
**No. 1—Price, $11.50**
**No. 2—Price, $18.50**

**For Solid Dies**
**No. 1—Price, $10.00**
**No. 2—Price, $17.00**

**Manufactured Solely by**

**C. M. KEMP MFG. COMPANY**

**BALTIMORE, MD.**

# A woman can smell right through a lot of mint and cloves and detect the faintest odor of whiskey

**A plumber has equal intuition in the selection of a solid die when once he has used the Nye.** The Nye Solid Die fits any solid stock in all sizes from one-eighth inch to three inches, inclusive. It is made of razor steel and the motto over my factory door is:

**"Do it better than anybody else."**

To prove that quality pays, I have but to cite the immense business I am doing compared to my small start only a few years ago. To make better tools than your competitors and to put quality into your tools means success. **The best will win if properly pushed.** The die that works with fifty per cent of the amount of labor expended, when compared to any other similar die, is sure to lead the die market, and that's why the Nye Die is leading it.

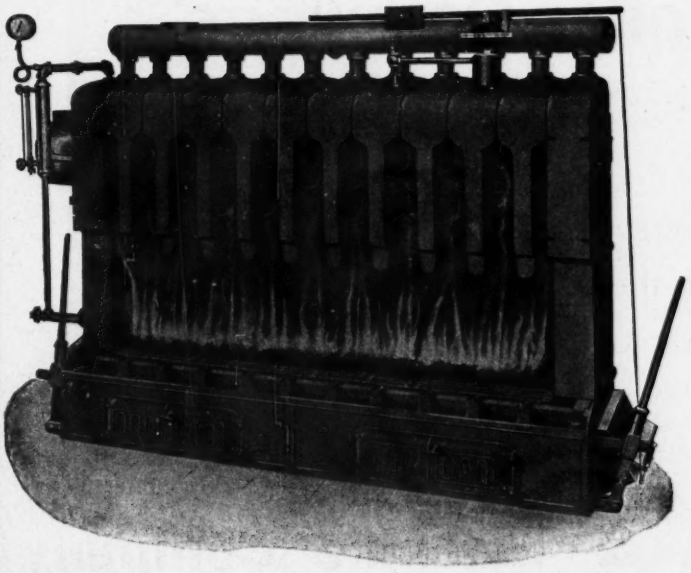
Just as it is usually the bald-headed duffer who makes the most fun of the girl's red hair, so it is the fellow who can't produce as good a tool as you can who **scoffs loudest at your article.** When I say the Nye Die is the best in the world, I prove it by sending it for a free trial.

**NYE, THE DIE MAN**

## The Nye Tool and Machine Works

**114 North Jefferson Street, Chicago, Ill.**

# Less Flue Surface—More Heat



Large flue surface is of little value where soft coal is used, as the gases soon soot it up, effectively preventing much heat from passing into the water.

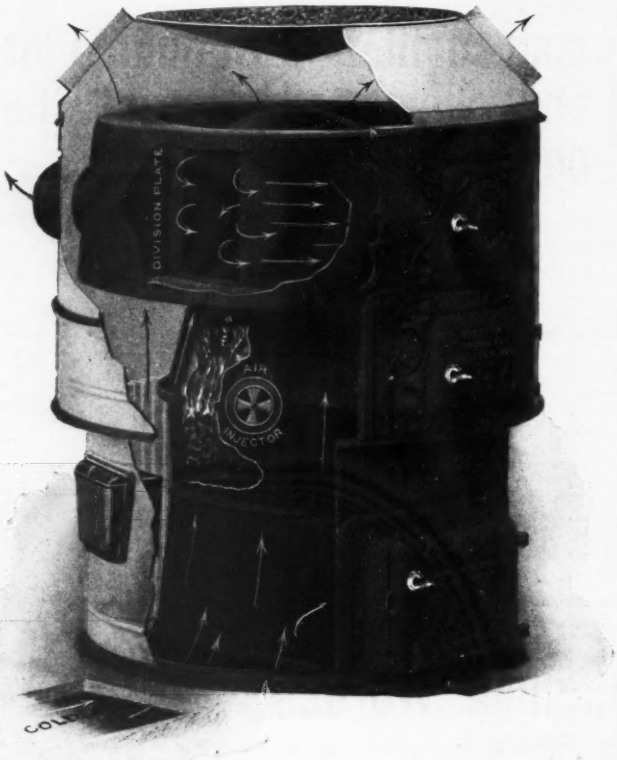
## *Prox Line Boilers*

have less flue surface than any other make. The arrangement of sections is such that the fire comes in direct contact with the water pockets, thus utilizing a greater per cent of heat units than is possible with any other type of boiler.

We make **"Economic"** and "Radium" Boilers and Garbage Burners for all kinds of fuel—Flat buildings from Six to Thirty-six Apartments.

**Send for Boiler Catalog**

## FRANK PROX COMPANY, Terre Haute, Ind.




The Furnace you will eventually handle

# BOYNTON'S

PATENTED

## "SQUARE POT"

(TRADE MARK)

**Square Grate**
**Square Base**

Most economical furnace made. Write us, we like to answer questions about them.

**BOYNTON FURNACE CO.**

106 W. 37th St. NEW YORK
147-149 Lake St. CHICAGO
230 Pacific Ave. JERSEY CITY

# "Trenton" Boiler Couplings
# "Trenred" Boiler Couplings

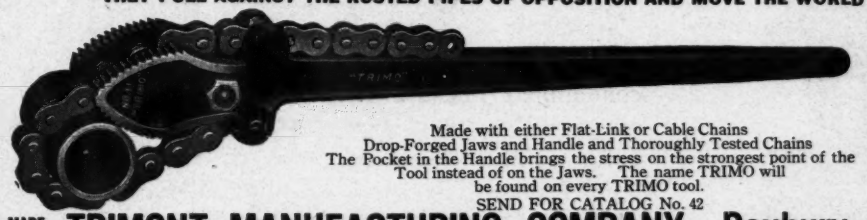
Are known wherever brass boiler connections are used. Ask the plumber who uses them.
Sold through jobbers

**Trenton Brass & Machine Company**

**Office and Works: Trenton, N. J.** **New York Office, 5 and 7 E. 42d St.**

# Trimo Tools are Examples of Strength

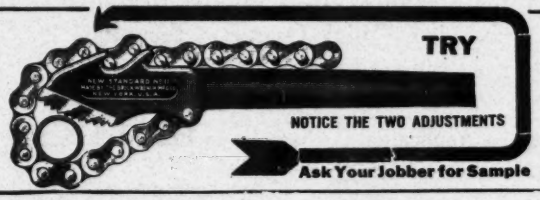
THEY PULL AGAINST THE RUSTED PIPES OF OPPOSITION AND MOVE THE WORLD OF INDUSTRY



Made with either Flat-Link or Cable Chains
Drop-Forged Jaws and Handle and Thoroughly Tested Chains
The Pocket in the Handle brings the stress on the strongest point of the Tool instead of on the Jaws. The name TRIMO will be found on every TRIMO tool.
SEND FOR CATALOG No. 42

The Trimo Chain Wrench is side by side with the other Trimos in the front ranks of Tooldom.

MADE BY **TRIMONT MANUFACTURING COMPANY, Roxbury (Boston) Mass.**




When you flag a train there is a reason.
When you use a Brock's New Standard Chain Wrench there is also a reason.
Try it on Fittings of any kind.
The half link adjustment will allow no slack in chain.

**Brock Wrench Manufacturing Company**
18 Dey Steeet, NEW YORK

THEY ARE "FLAGG QUALITY" — THE BEST QUALITY

**FLAGG** WHEN YOU WANT MALLEABLE FITTINGS KEYSTONE UNIONS **FLAGG**

STANLEY G. FLAGG & COMPANY, PHILADELPHIA, PA., AND NEW YORK CITY

# Buffalo Boilers

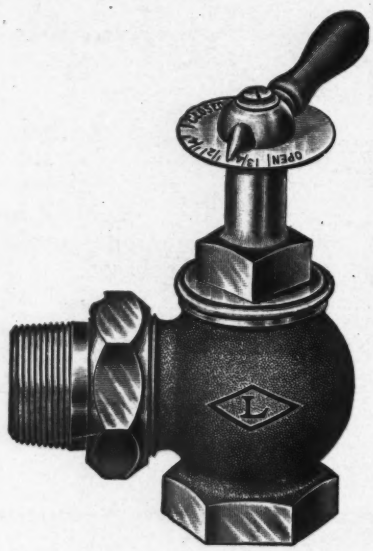
## VERTICAL
## Fire Travel Water Ways

Heat of its own accord rises; you will observe that this principle is embodied in the

## BUFFALO BOILER

and brings it to the highest point of efficiency. One installation will convince you.

## W. A. CASE & SON MFG. CO.
BUFFALO, NEW YORK



# Removing the Weak Link

Many Vacuum Heating Installations have been condemned because they could not be kept air tight, as the leakage of air around the valve stems offsets the work of the Pump. The Lavigne Packless Radiator Valve completely overcomes this deficiency. It is absolutely air tight and its use will insure the permanent maintenance of vacuum conditions. Our valve is also Quick-Opening (one-half turn), Self-Locking and Fool Proof.

**Descriptive Matter on Application** **Samples to Interested Parties**

**"Use Lavigne Valves on Your Good Jobs"**

## LAVIGNE MFG. CO.,

**(Valve Dept.)** **DETROIT, MICH.**

**If at first you don't succeed**
**Try the other fellow's scheme**

That Scheme Is a

# "RYAN"

## Rectifier for Hot Water

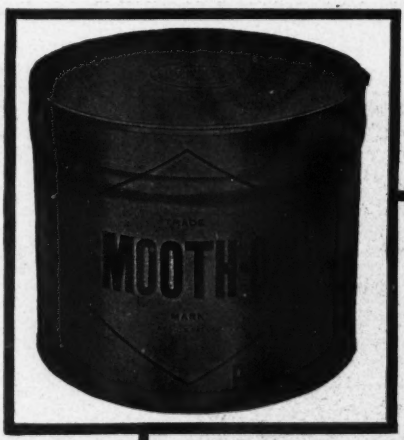
The "RYAN" Vacuum System for Steam, or a Ryan Tilting Steam Trap, Separating or Return.

**THINK IT OVER, AND SEND FOR CATALOGS**

## E. J. Ryan

**117 North Walnut Street**

**DANVILLE, ILL.**




# ?

**DO YOU KNOW IT?**

**SAVES TIME AND $**

**LOOK FOR THE RED LABEL**

## YOU CAN

Make a lead joint without caulking lead—Send postal today for our 100-page book showing how.

IT IS FREE

**SMOOTH-ON MFG. CO.**

**JERSEY CITY, N. J.**

**Chicago Warehouse:** 231 N. Jefferson Street

**San Francisco Warehouse:** 94 Market Street

Kindly quote "Domestic Engineering" in writing advertisers.

# BEAVER DIE STOCKS

¶ The only remedy for broken grip screws and loose Bushings is found in the new No. 25 1-in. to 2-in. "BEAVER"—king of easy workers.

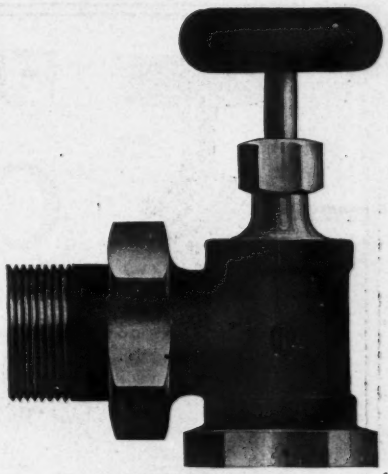
The No. 25 1-in. to 2-in. "BEAVER" has a universal chuck which does away with loose bushings and it threads all sizes with one set of dies so that it is complete within itself—no loose parts. Let us send you catalog showing other improvements and all sizes of Beavers.

*Carried in stock by all Jobbers*

**Don't buy till you try the No. 25**

**THE BORDEN CO., WARREN, O.**

# CON-SIDER CARE-FULLY



"Ohio" Hot Water Valve

## The ADVANTAGES In SELLING "OHIO" HOT WATER VALVES

(1.)—The advantages of one of the best equipped factories in the country where **quality** of **product** is placed ahead of other considerations.

(2.)—The advantages of an experienced engineering and designing staff whose services contribute to make **"Ohio" Valves the best in their class.**

(3.)—The advantages of efficient organization and production methods which enable us to sell "Ohio" Valves at prices comparable with those of inferior valves.

(4.)—The advantages of knowing that "Ohio" Valves **will satisfy your customers,** and that there will be no defective pieces.

(5.)—The advantages of **prompt** shipments.

*Catalogue D, mailed upon request*

## The Ohio Brass Co.

**Mansfield, Ohio**

New York
Chicago
San Francisco
Louisville, Ky.

# FLAWLESS VALVES

OF POSITIVE, DEPENDABLE QUALITY AND EFFICIENCY IS THE ASSURANCE YOU GET WITH EACH AND EVERY SHIPMENT OF

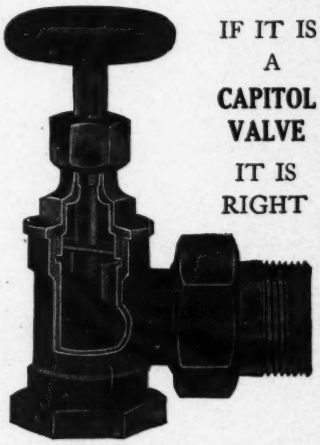
# CAPITOL VALVES

J. D. Steam Union Radiator Valve

No effort is spared to turn out only high grade goods through and through

## IT PAYS

us to turn out valves that are a little better than seems necessary; better material, better workmanship and at right prices



Hot Water Union Radiator Valve

IF IT IS A **CAPITOL VALVE** IT IS RIGHT

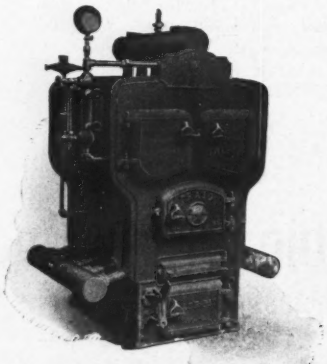
**Improved Hot Water and Steam Radiator Valves**
**Union Elbows, Corner Radiator Valves**
**Union Gate Valves**

ALL GOODS CAREFULLY INSPECTED BEFORE SHIPPING
SEND FOR CATALOG, ORDER FROM YOUR JOBBER

**CAPITOL BRASS WORKS, Detroit, Mich.**

# CRAIG BOILERS

have established themselves with the most progressive steam fitters in the country. Note the construction, a deep fire pot, the combustion chamber wider than fire pot to permit of proper combustion of gases, the absence of horizontal water passages, rapid internal circulation, the maximum of *direct* fire surface, down draft in rear of boiler. Our catalogue tells you of the other advantages of the CRAIG.



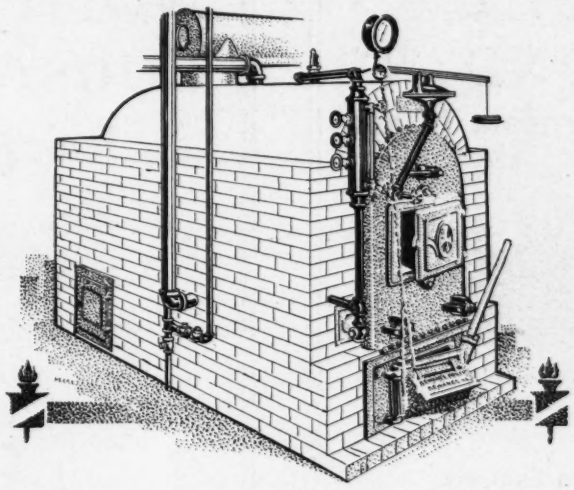
## Vulcan Round Boilers
## Koran Radiation

*Architects, see Sweet's Index*

## WILLIAMSPORT RADIATOR CO.

**Office and Works:**
**WILLIAMSPORT, PA.**

**Branch Office, 99 Beekman St.**
**NEW YORK CITY**



# Get Wise

Get wise to the fact that The Old Man Behind The Boiler is making the boiler buyers look around a bit before they decide on their heating apparatus. They are looking for the name KEWANEE. He is putting them "next" to the fact that their buildings **can** be heated, and at a small cost, that those who own rentable buildings, **can** fill them with tenants if they have a KEWANEE Fire-box boiler in the basement, and they are heeding his advice.

A demand is being created for these boilers that has exceeded our wildest hopes. This is no idle dream, but cold, cold facts. Our method of publicity is doing the work.

Don't you see where **you** can make some money out of this too? **Our prices are right** and will let you in on anything. If you are looking for a little cheap unreliable boiler that **don't get you no place,** don't bother with us, we haven't that kind, but if you want a boiler that is on the job day and night, year after year, pleasing **your** customer, and at a price that will enable you to make some money, then we say GET WISE, KEWANEE boilers are that kind.

Ask The Old Man Behind The Boiler for catalogues No. 54 and prices.

## KEWANEE BOILER COMPANY

KEWANEE, ILLINOIS

Cover Large Pipes, Heaters, Stacks, Boilers, Etc., with

**"DIAMOND N"**

**Asbestos Magnesia Block**

**They Are Just Right**

They fit closely and make a very compact covering for such surfaces. Except that extra long asbestos fibre is used in these blocks, materials are practically the same as in our high pressure coverings.

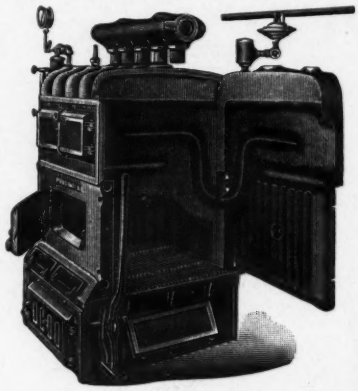
**Ask for Free Samples**

and any information desired about our coverings. Our suggestions should prove valuable to you.

**NORRISTOWN MAGNESIA & ASBESTOS CO.**

**Norristown, Pa.**

# Notice This Construction



## Prudential Boiler

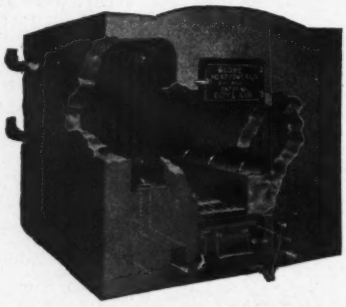
Sections are placed side by side, giving 75 per cent direct fire surface. They are quick, economical heaters. Our catalogue tells why. Write for a copy.

**Prudential Heating Co., Akron, O.**

# DOYLAIR

**New Principle of Combustion**

Allows you to use any kind of clean, hard or soft coal. **Saves 50%**



WRITE FOR CATALOGUE OF

**Coal Heaters, Warm Air Furnace, Hot Water and Steam Heating Boilers, Furnaces for Steam Power Purposes**

**GLOBE HEAT-POWER COMPANY**

**213 RANDOLPH STREET, . . . CHICAGO, ILL.**

# The Hanna "Ball Joint" Pipe Hanger

**SIMPLEST**

**STRONGEST**

The only thoroughly reliable hanger on the market. **Neat, Symmetrical.** Guaranteed to be the strongest hanger made. The ball and socket joint allows hanger to swing in any direction. Pipe may be lowered or raised without removing hanger. No loose parts to drop off or get lost.

We also make "Penn" and "Ball Joint" Steam and Water Specialties

Write for our "Silent Salesman"

**The Penn Engineering Co.**

**Philadelphia, Pa.**

**Kindly quote "Domestic Engineering" in writing advertisers.**

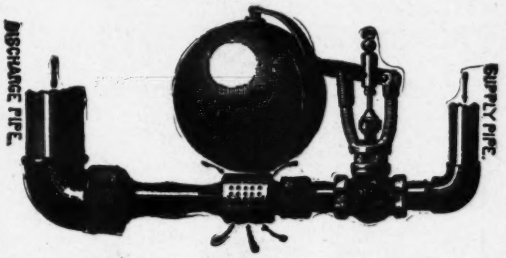
## Always on Watch!

**THE BRAENDER**
# CELLAR DRAINER
**and BILGE SYPHON**

Operated by Steam or Water

Sanitary experts endorse it.
U. S. Government uses it.
Guaranteed satisfactory.

The Braender Bilge Syphon. Always on watch.

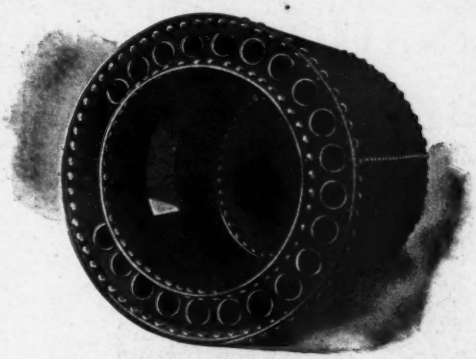



Sold to the trade only. Write for circular and testimonials

**PHILIP BRAENDER, 143 W. 125th St., NEW YORK**
Sales Agent: W. N. McKenna Company, 79 Chestnut St., Boston, Mass.

# Dunning Boilers

Are built at the factory by expert mechanics. No packed, screwed or pushed connections---instead, steel to steel with hot-driven rivets.

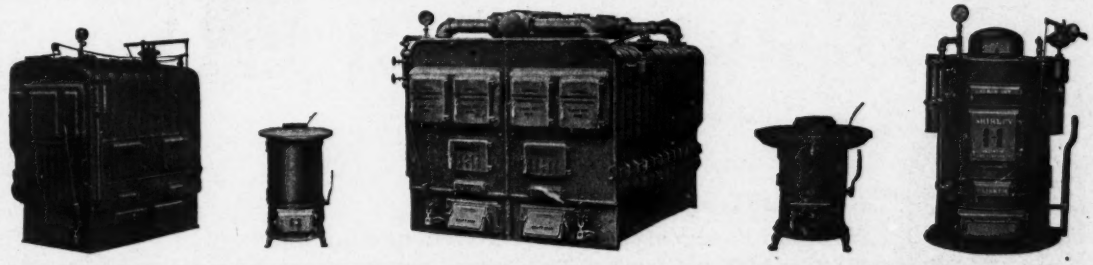


**HAVE FEW PARTS**

Reducing repairs to a minimun. There is not another heating boiler made that has so few repairs.

Send for Dunning Catalog---38th Edition

**New York Central Iron Works**
GENEVA, N. Y.



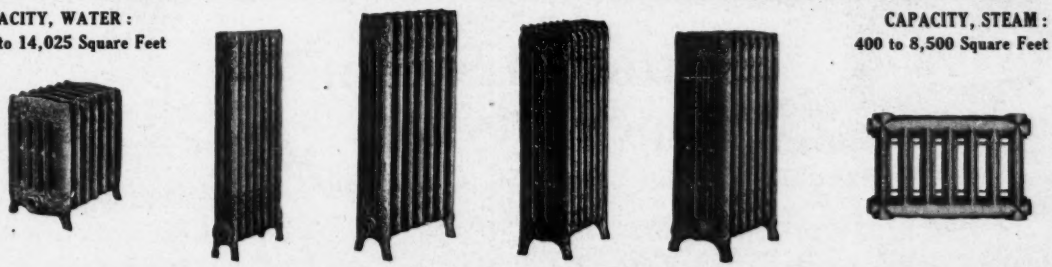
# SHIRLEY BOILERS and RADIATORS

## A Complete Line

**Manufactured by SHIRLEY RADIATOR AND FOUNDRY CO. -- Shirley, Ind.**

**CAPACITY, WATER:**
**600 to 14,025 Square Feet**

**CAPACITY, STEAM:**
**400 to 8,500 Square Feet**



# Are You Interested in High-Grade Steam Specialties?

## National Gauges and Automatic Air Valves

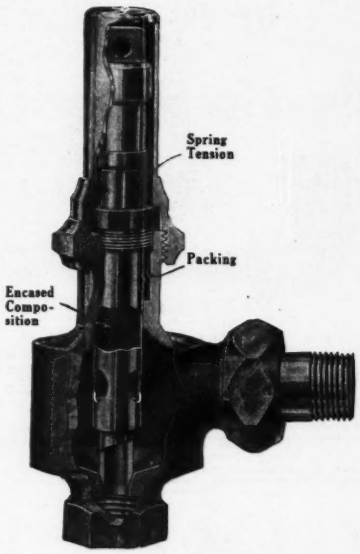
National Altitude Gauge

Are worthy the attention of every Boiler Manufacturer, Jobber and Steam Fitter.

### Have You Placed Your Orders Yet?

Get in line now and send for our catalog and discount sheet. Also our new and interesting Valve Circular which shows ten distinct styles of Automatic Air Values for every purpose.

We offer special inducements to jobbers of valves in large quantities.




National Thermostatic Trap

National No. 1 Valve

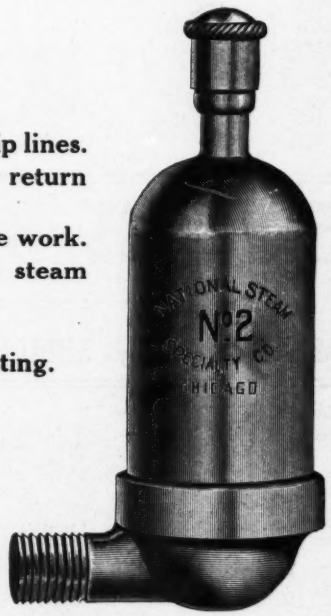
A few of our specialties:

**National Gauges of all kinds.**
**National Paul Valve for Paul System or drip lines.**
**National Thermostatic Trap for vacuum return systems.**
**National No. 9 Drain Valve for high grade work.**
**National Automatic Air Valves for all steam heating.**
**National Hot Water Thermometers.**
**Compression Air Vents for hot water heating.**

**Write Today**

## National Steam Specialty Co.

**12-14 S. Clinton St., Chicago, Ill.**




National No. 2 Valve

Surpless, Dunn & Company, 74 Murray Street, New York

See Sweets Index Pages 850-851

No. 7

No. 7

No. 3

No. 6

## The B. & C. Line

OF

## Plates for floor and ceiling

¶ The plates known throughout the United States and Europe, as the best possible to obtain. Can be procured from any large supply house. Made in black, nickel plate and coppered before nickeling and brass. From ¼-inch to 10-inch.

*THE OLD ORIGINAL COMPANY*

**The Beaton & Corbin Mfg. Co.**

SOUTHINGTON, CONN., U. S. A.

## The Burnham

**EVERYTHING IN FRONT**

With all The Working Parts in The Front, The Burnham is one of the handiest of boilers to run; shaking arm, clinker door, drain cock, flue clean-out doors, everything handy right in front. Even the smoke box damper is operated by a rod in front.

Send for a catalog

**Lord & Burnham Co., Irvington, N.Y.**

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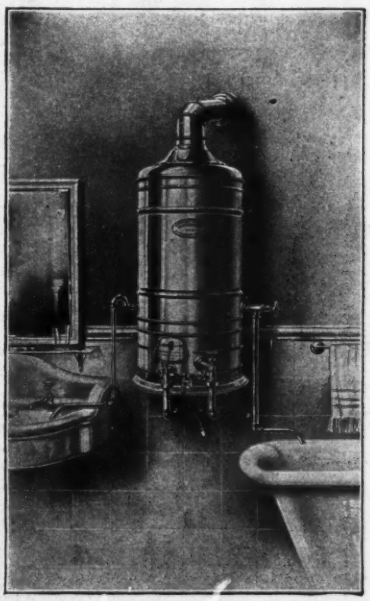
|---|---|
| BOSTON | 819 Tremont Bldg. |
| PROVIDENCE | Allen & Reed, Inc. |
| MINNEAPOLIS | Roberts Heating and Vent. Co. |
| CHICAGO | Chicago Heater & Supply Co. |
| PHILADELPHIA | Haynes-Thompson Co. |
| JOHNSTOWN, PA. | Union Radiator Co. |

# GOOD REASONS WHY



**EVERY PLUMBER SHOULD SELL HUMPHREY INSTANTANEOUS BATH WATER HEATERS**

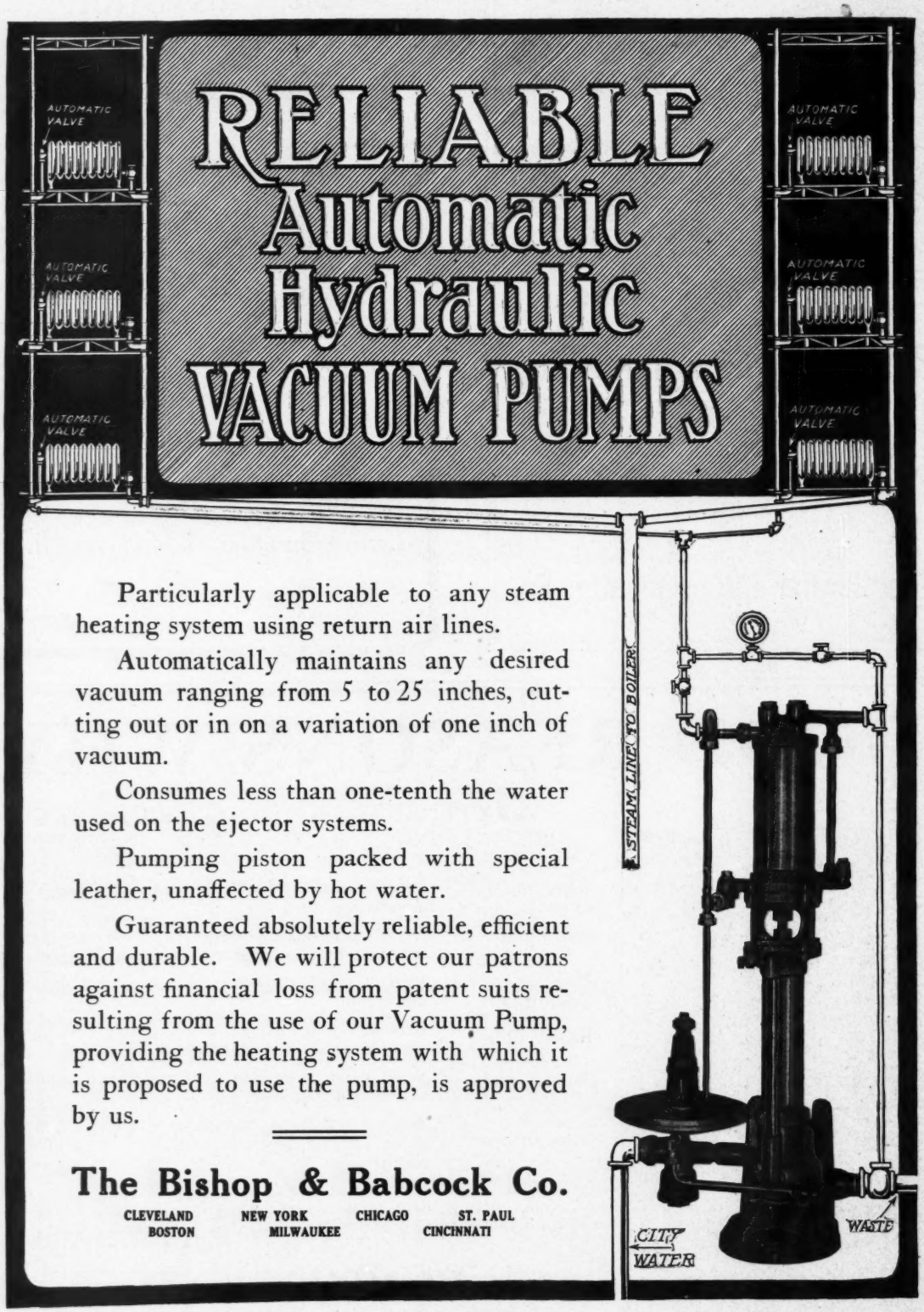
| | |
|---|---|
| Two Profits | Every sale means a profit on a heater, also on installation. |
| Big Field | Every home should have one. We will gladly tell you why. Every home can afford one at least. |
| Makes Pleased Customers | Every pleased customer means more business and profit. |
| Easily Sold | Extensively advertised in every way. Shall we tell you about our sales helps? |
| Good Goods | Well made, attractive and always dependable. Wonderfully economical and convenient. |
| Guaranteed | You can sell them, knowing they are backed by an old reliable, dependable concern, which always makes good. |

Start selling them now. It will pay you, your customers and ourselves. Catalog free. Orders filled on receipt.

## HUMPHREY CO.

Kalamazoo, Mich.

# RELIABLE Automatic Hydraulic VACUUM PUMPS




Particularly applicable to any steam heating system using return air lines.

Automatically maintains any desired vacuum ranging from 5 to 25 inches, cutting out or in on a variation of one inch of vacuum.

Consumes less than one-tenth the water used on the ejector systems.

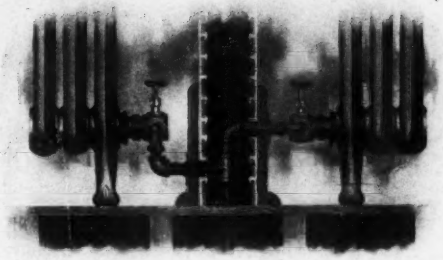
Pumping piston packed with special leather, unaffected by hot water.

Guaranteed absolutely reliable, efficient and durable. We will protect our patrons against financial loss from patent suits resulting from the use of our Vacuum Pump, providing the heating system with which it is proposed to use the pump, is approved by us.

**The Bishop & Babcock Co.**

CLEVELAND NEW YORK CHICAGO ST. PAUL
BOSTON MILWAUKEE CINCINNATI

# NOTICE HOW—



these radiators are connected.

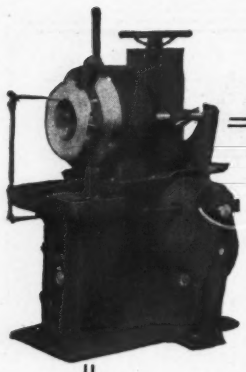
The cut shows one of the many ways in which hot water radiators may be piped by using the Honeywell Unique Hot Water Radiator Valve.

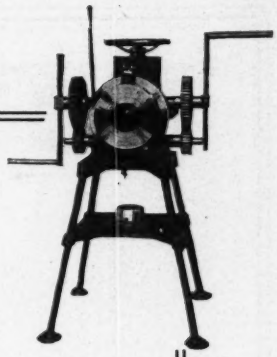
## Some of the advantages of the Unique Radiator Valve

One end connection to radiator only. Adjustable elbows, making piping from any direction possible. Valve elbows on right centers for risers. Positive circulation through radiator, no matter how large or long. Turns on or off by one-sixth of a turn of the handle. By-pass opening the full size of piping when valve is turned off, permitting the full flow of water to pass through the piping and valve body. Requires no more space to connect than a common valve, saves the dimensions of the return elbow, does away entirely with cutting floors and joists to install as there need be no piping under the floor or radiator. No damage from concealed piping between floor and ceiling under upper floor radiators. Costs little or no more to install than the ordinary valve and elbow as there is quite a saving in piping and labor. Is ideal for second and higher floors work, especially in old buildings. Honeywell Unique Valves are specified by the leading architects and are to be found in many of the finest hot water jobs that have been installed within the past few years. Unique Valves are carried in stock by all of the leading jobbers throughout the country. Write for description, prices, etc.

## HONEYWELL HEATING SPECIALTY CO.

**WABASH, INDIANA**





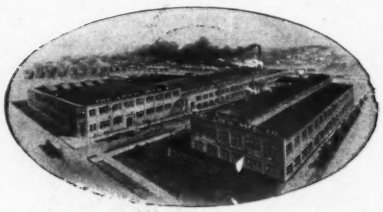
# The Loew Victor Pipe Machine

## Motor, Belt and Gas Engine Driven Also Hand Operated

For the Large or Small Contractor
¼ to 8 inch pipe
Construction Correct in the Minutest Detail. Will Pay for Itself on One Large Contract

*WHERE THE*

*LOEW VICTOR*

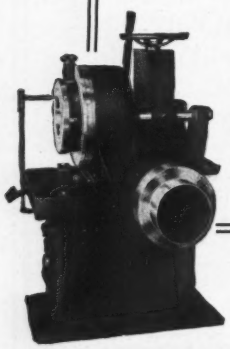


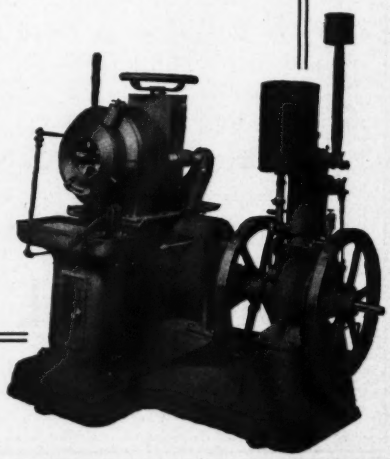
*IS BUILT*

In this day you can't afford to be out of date, neither in your methods or in your equipment. Your success depends upon your keeping up with the times and employing the best and most up-to-date methods at your command.

The LOEW VICTOR is designed for the progressive, ambitious, wide-awake man, who can't afford to waste time and money in antiquated methods.

*Get our Catalog*

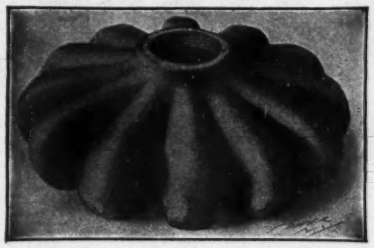




## The Loew Mfg. Co.

**CLEVELAND, OHIO**

## Water Heating Sections



IRON OR BRASS

For use in furnaces, heating water by steam, etc.

Sizes: 5-6-8-12-16-20 inches.

Write for particulars

ANDERSON-McCUTCHEN CO., PEEKSKILL, N. Y.

**HEATING CONTRACTORS**

will find with us a large and complete stock of everything necessary for that heating plant which they are going to install. Prices being right, and complete shipment from one point, should induce you to give us a trial order.

Write for Catalog and Prices

CHESAPEAKE SUPPLY CO.

1009 to 1015 Ninth St., N.W.

WASHINGTON, D. C.

## Take Out the Coil

in the furnace and install this

## HEATER

It will Save 25% of the fuel

40 Gallon Capacity

**Richardson & Boynton Co.**

20 LAKE STREET, CHICAGO

## JOHN SIMMONS CO.

104-110 CENTRE STREET NEW YORK, N. Y.

Wrought and Cast Iron

**PIPE**

Malleable and Cast Iron

**FITTINGS**

Brass and Iron—Globe and Gate

**VALVES**

Tools and Specialties

FOR

STEAM
PLUMBING
GAS, AND
HYDRAULIC

**ENGINEERING**

## Why 50,000 "STARS" were used in the Metropolitan Tower!

Here's the reason—Because the most exhaustive tests known have failed to bring out even one defect in this Anchor. There's a reason for this also. Note where the hand is pointing. See those expanding jaws? As the screw is turned in, they *expand*, wedging themselves in the wall. This is why engineers invariably specify

**STAR SCREW ANCHORS**

This is why they were used to the exclusion of all others in attaching plumbing fixtures, etc., in the world's largest office building. Here was a time when experimenting was a crime—at least in the builders eyes.

A *strong, sightly, economical* fastening was demanded. Wood plugs and soldering irons were forgotton.

They Used: STAR SCREW ANCHORS

*Write for free samples and large catalogue 22,*

STAR EXPANSION BOLT CO.

Catalogue Department 22

147-149 Cedar St. New York City

# Florence Heaters

## Keep a Steady Water Line

ALL fitters know that more trouble is caused by steam heating boilers not keeping their water line than from any other one thing. This is because of lack of circulation in the boiler, and the **"Florence,"** from Kokomo, is designed particularly to provide this, and it does. The water line is maintained and the boiler is always working.

### Steaming Under Checked Drafts

Few heating boilers continue to make steam under checked drafts. By the peculiar construction of the "FLORENCE" from Kokomo, it does this very desirable thing. Hence as an economical fuel saver it's a wonder.

### Just These Points

should cause you to handle the **"Florence"** from Kokomo. There are many other equally good arguments in our catalogue, which we think is the most instructive catalogue yet produced.

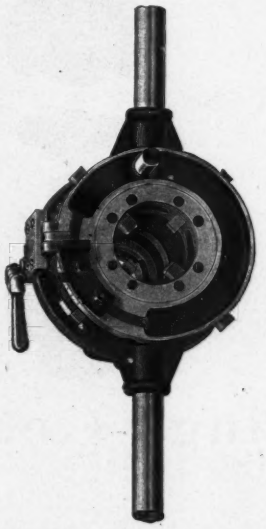
*We will send it free on request*

## COLUMBIA HEATER COMPANY

**FORD & DONNELLY** **KOKOMO, IND.**

# If You are Looking for Improved Tools

## The "BUCKEYE"



1 to 2 inch size. Front View.

**Die Stock for Threading Pipe is One You Will be Interested in.**

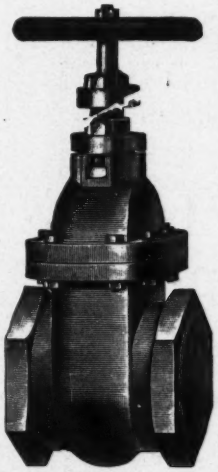
There is no easier cutting tool. It is the only "easy-cutter" that does not have to be turned back. It is the only one without a leader screw and its troubles. The dies lead on and release automatically.

## THE HART MFG. COMPANY

1350 E. Third Street Cleveland, Ohio, U. S. A.

# Harvey's

## Gate Valve



Discs interchangeable. Can be packed either opened or closed. Full weight, first-class material, superior finish.

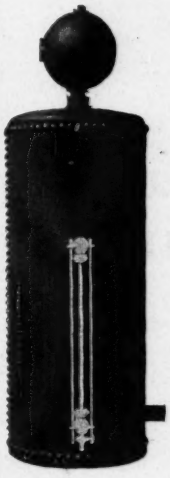
Made in Brass and in Iron Body, both screwed and flanged. Bell ends. Rising stem and yoke. Standard, medium or extra heavy. For water, steam, gas or oil.

## A. Harvey's Sons Mfg. Co., Ltd.

MANUFACTURERS OF
Steam, Gas and Plumbing Goods
DETROIT, MICHIGAN

# More Heat from Old Heating Plants

## The Milwaukee Heat Generator



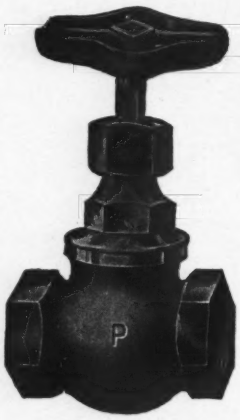
¶ Circulates the water through the system three or four times faster than is ordinarily accomplished. This means that the water reaches the radiators much hotter, and radiates much more heat than it otherwise would.

¶ Also heats quicker and more satisfactorily, at the same time reducing fuel consumption. Reduces cost of material and labor in installing new jobs.

*Send for Illustrated Catalogue*

## Milwaukee Heat Generator Co.

458 Eleventh Avenue MILWAUKEE, WIS.



# Insist on Pittsburgh Valves

**and Fittings. It is impossible for human skill to produce better or more reliable equipment than that stamped with the Sign of Quality—"P".**

## Pittsburgh Brass Valves

**are made in a superior manner of the highest grade steam metal, and are sold under our binding guarantee.**

## Pittsburgh Brass Valves

**are sold with the distinct understanding that they will wear under extraordinary pressures and conditions which would quickly make ordinary valves worthless. We could not possibly make this broad guarantee if the thousands of Pittsburgh Valves in daily use did not justify it. If better work and longer life means anything to you, insist on "P" Products.**

## Pittsburgh Valve and Fittings Co.

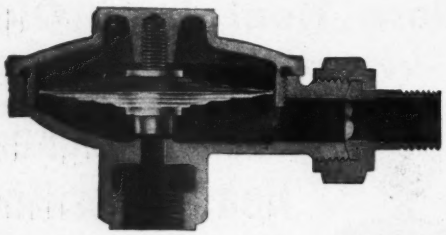
**General Offices and Works**
**BARBERTON, OHIO**

CHICAGO OFFICE
1145 Marquette Building

PITTSBURGH OFFICE
1611 Frick Building

NEW YORK OFFICE
258 Broadway, Room 405

SAN FRANCISCO OFFICE
Atlas Building., 604 Mission Street



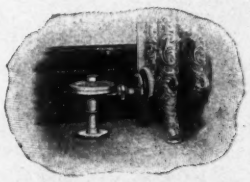
# No Vacuum System Can Be Better

than the radiator trap upon which it depends. It is therefore of vital importance that a simple, durable and efficient trap be used.

# The Dunham Radiator Trap Is the Most Durable—Because Simplest

This trap has but one movable part—the disc and valve, both on one stem—it is permanently adjusted before leaving the factory. Nothing to wear or loosen. Nothing could be more simple—nothing more **durable.** Once installed the Dunham trap is there to stay, always doing its work effectively and silently. The Dunham will last as long as the house.

*We prepare complete heating plans. Write for details and our new catalogue "C."*



This cut shows Trap attached to radiators.

## National Vacuum Heating Company

**MARSHALLTOWN, IOWA**

**Chicago Office: 503 Fisher Building**
**Philadelphia - 18 So. 7th Street**
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# Do You Read Our Weekly Sermonettes?

## If not, take our pew for five minutes

Last week's sermonette was read by Grant Witt & Co., Winchester, Ky., and they sent in this fine photograph right away. In it, you will see Mr. Witt, the proprietor, at his desk. This firm started business 19 years ago on a side street in a small structure, 18x40 ft. Today the business is housed in a fine building, 24x105 ft., on the main street.

At the commencement, Mr. Witt and one helper did all the work. Now the business employs from 8 to 12 men and the trade is still developing. Dirty windows and cobwebbed goods were not factors in this prosperity. Kentucky, famous for fine women, whiskey and horses, has added "blue grass" plumbing to its noteworthy products. This sermonette to have its full effect should induce you to send us some more photographs from other parts of the country.

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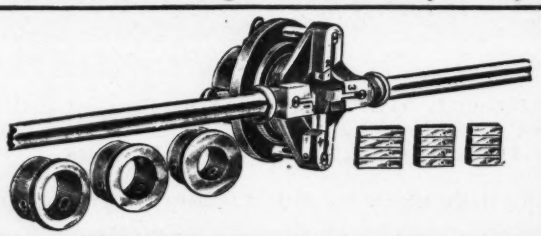

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# DOMESTIC ENGINEERING

Whole No. 903. Vol. LI. No. 1. 325 Dearborn St., Chicago. April 2, 1910

CONTENTS.

War Declared Between R. O. T. and B. T. U. ..... 1
Plumbers' Liability-Insurance ..... 3
Trade Papers, Beware!..... 4
Captains of Heating and Plumbing Industries at Hot Springs ..... 4
The New Heating Station of the University of Wisconsin, Madison ..... 5
Missouri Master Plumbers Meet at St. Joseph, Mo.... 8
Convention Dates ..... 9
Personal Mention ..... 9
Business Management ..... 10
What is the proper percentage of "Overhead Expense"? ..... 10
Where Should He Go? ..... 10
Amount of Gas Bill ..... 11
What is it that Begins at Home? ..... 11
The Plumber and the Press ..... 11
Why Not Start a Factory and School Campaign Yourself? ..... 12
The Plumber's Profit ..... 12
The Job Which Was Slated to Fail But Did Not..... 13
Questions and Answers ..... 15
Further Comments on "Wait a Minute" ..... 15
Question About Size of Boiler ..... 15
Questions C. N.'s Sick Job ..... 16
How is the Capacity of House-Heating Boilers Figured? ..... 16
A Champion for Cement ..... 16
On Cleansing Air ..... 16
Rule for Finding Size of Steam Mains ..... 16
An Unusual Question..... 17
How to Prevent Cracking of Closet Bases..... 17
Do Plumbers Use Force-Pumps? ..... 17
Special Equipments Afford Opportunity to Business-Seeking Plumbers ..... 18
A Few Don'ts for Plumbers..... 19
Wolverine Brass Works Build Addition to Their Plant ..... 20
Shirley Radiator & Foundry Co. Moves Its General Offices to Shirley, Ind. ..... 20
Machinery Manufacturers and Dealers to Meet in Joint Convention at Atlantic City, N. J. ..... 20
Arrangements Made for Exhibition of Plumbing and Heating Goods at the Master Plumbers' National Convention in Chicago ..... 20
Chicago Branch of National Metal Trades' Association Holds Annual Meeting ..... 21
New England News ..... 22
The Metal Market ..... 23
Pig Iron Continues to Decline ..... 23
Tin Market Down and Up ..... 23
A Waiting Copper Market ..... 23
The Lead and Spelter Market ..... 23
The Old Iron Market ..... 23
Racine (Wis.) Plumbing Strike Ended ..... 23
Stern "Plumber" Ordinance Passed in Milwaukee..... 23
Pacific Coast Letter..... 24
Patents ..... 50
Purchase the Champion Torch Line ..... 51
Government Contracts to be Awarded ..... 51
Classified Advertisements ..... 52
Index to Advertisers ..... 54

## WAR DECLARED BETWEEN R. O. T. AND B. T. U.

### Full Account of Conflict to Be of Great Value to "Domestic Engineering's" Readers.

It is with great pleasure that we announce the commencement of a new series of articles in "Domestic Engineering," the first of the series to appear in our April 9th issue. It will be entitled "A Practical Manual of Steam and Hot-Water Heating," and will fulfill all expectations raised by the name.

R. o. t. is an abbreviation for Rule-of-Thumb, and B. t. u. for British Thermal Unit. Between these two, war has been declared, whose result is inevitable and will be the dethronement of Rule-of-Thumb which has held sway over men's minds and has directed their practices for so many centuries. The series will describe in an interesting, practical and helpful way, the reasons for the conflict, the worthless authority of Rule-of-Thumb methods, and the practical efficiency to be attained by the employment of British-Thermal-Unit measurement.

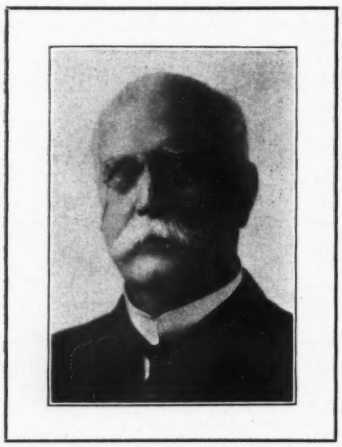
There are three essentials to be considered in placing any work before the public. First, there must be a need for the work; second, the author must be familiar with all the theories and practices involved in the consideration and presentment of the subject of the work; third, the manner of the presentment of the subject must be clear-cut in its statements, accurate in its basic facts, and sequentially logical in its arrangement.

It will not be necessary to attempt to prove the need of a work, which will enable those engaged in the installation of steam and hot-water equipments, to calculate efficiently and with greater accuracy the extent of such equipment. The numerous instances of unsatisfactory installations made by men of recognized experience, and who have successfully installed other systems under different conditions, afford sufficient evidence of this need.

It would be well to state here that this new prac-

tical manual of steam and hot-water heating is meant to apply chiefly to the steam and hot-water heating of residences and small buildings. The large heating jobs are undertaken, as a rule, by specialists in the subject, who have at their command all the data for successful carrying out their work. On the other hand, residence-heating offers so many variations that a great mass of plumbing and heating business men have found it hitherto difficult to reconcile the ratios esteemed correct for large heating installations with their variable experiences in small residential equipments. Anyhow, most failures are the result of a fatal faculty for ignoring fixed laws in varying conditions.

This subject is undoubtedly an important one from the fact that it requires over 300,000 new



Edward Richmond Pierce.

houses to supply each year the natural increase of this country's population, and it has been estimated that the annual loss by fire exceeds 80,000 houses. The field for the plumber and steam-fitter on this new and reconstructive work is large, and it is to be expected that it will continue to extend year by year. To turn these 300,000 houses into homes will be your privilege for "A home is a house with the chill taken off."

We next come to the consideration of the qualifications of the author of the work for his task. We introduce to you herewith, Edward Richmond Pierce, who has embodied in his manual the result of his observations during his active participation in the growth of the heating industry in the United States for nearly one quarter of a century.

Mr. Pierce first entered the heating business as a manufacturer of wrought-iron pipe radiators and cast-iron heating boilers in Portland, Me. The company also installed heating plants. Soon after the cast-iron radiator manufacturers began to gain prominence, he became connected with the Michigan Radiator & Iron Manufacturing Co., Detroit, Mich., as manager of the company's New England business, with offices in Boston. Under his management the Detroit company soon grew to be the largest distributor of cast-iron radiators in New England.

When the American Radiator Co. was formed, Mr. Pierce was selected as manager of its New England territory, and after this office was thoroughly established on a business-like basis, he was transferred to the great central district with headquarters in Chicago.

In this new position the business in Michigan, Indiana, western New York and Pennsylvania, West Virginia, Ohio, Kentucky and portions of the South came under his control and Mr. Pierce's success was marked. About eight years ago when the business of this district had grown to large proportions, a branch was established at Cincinnati to develop the southern states from the Ohio to the Gulf, and from the Atlantic to the Mississippi river. To Mr. Pierce was assigned the supervision of this new branch. In January, 1909, he resigned his work and retired from active business, and for the past year has spent his time in travel and investigation of heating conditions throughout the country from coast to coast, the present manual being the result. It is given to few authors to possess qualifications so marked. His opportunities for observation of the needs of the trade to which his company catered were vast. He came into contact daily with minds of different types and with practices most varied. Furthermore, throughout his life-work he enjoyed the incalculable benefits of personal friendship with such men as C. C. Walworth, Boston; J. Nason, New York; Frederic Tudor, J. H. Mills and Colonel Green, all of Boston. The influence of these heating specialists on the development of the industry was very pronounced. Mr. Pierce maintained a close relationship with them through many years, and he claims that from Messrs. Tudor and Mills he derived in a special way the directing inspiration for careful investigation and inspection of heating problems, which have enabled him to perform his difficult task and bring it to a successful culmination.

In a recent interview with Mr. Pierce, one statement of his sets forth clearly the guiding principle which governed his writing throughout the series. He said: "I have written this work for the man on the nail-keg as well as the man in the office." Every word in the manuscript testifies to his faithful adherence to this principle. He presents to the plumbing and heating engineers throughout the country a carefully written series of considerations of heating problems, eliminating algebraic formulas and avoiding confusing and conflicting tables. No table is introduced without the reason for its exist-

ence being carefully explained before its logical appearance in the body of the manuscript.

Mr. Pierce has brought into his work the sifted wisdom of age, the sound judgment of maturity, and the buoyant enthusiasm of youth. His breadth of mind is shown in that throughout the series, there is no hint or trace that he considers the work as being the "last word" to be said on the subject. Rather has he written it as a solid foundation on which can be built the greater things to come. He offers it to the public through "Domestic Engineering" as a universal key with which can be opened many hitherto closed doors of investigation to thousands of inquiring minds.

The need, the author and the work are now made manifest, and we anticipate with great pleasure the appreciation of this new series by "Domestic Engineering's" wide circle of subscribers.

## PLUMBERS' LIABILITY-INSURANCE.

A matter of particular interest to the trade and one that is exciting widespread and general discussion among the members of the National Association of Master Plumbers is the agreement or arrangements made by the officers of the National for liability-insurance with the Casualty company of America, of New York City.

President Nolan in following the instructions of the Detroit convention, with the assistance of the chairman of the Insurance committee, Mr. G. A. Richards, of Grand Rapids, took hold of the subject in a business-like way and after considerable time and energy spent in securing rates from many of the companies doing this sort of insurance, concluded to recommend to the membership that they place their liability-insurance with the Casualty company of America, on account of the advantageous terms this company offered and the low rate which was made applicable to all members wherever they may be located, and the rate was to be the same to all, that is 75c per $100 of annual pay-roll without regard to what that pay-roll amounted to, the plumber whose pay roll was and is only $2,000 per year would get the benefit of the low rate the same as the plumber whose pay-roll was $10,000 or $100,000 per annum; for example, if A's pay-roll was $1,000 per year his premium would cost him only $7.50, while B with a pay-roll of $100,000 would pay $750.00 as a premium for his policy.

In the policy issued to "A" if an accident occurred through or by a team that he used in his business delivering material, etc., this accident would be covered by the policy, as the use of one team is covered in each policy, while if additional teams are used the company will write a policy to cover such additional teams at one-half the prevailing rate for team insurance in the locality where such teams are employed.

The amount of liability covered in one accident, where only one person is hurt or killed, is limited to $5,000, though if two or more persons are hurt or killed in the one accident then the limit of liability is $10,000.

The company has arranged for a separate department to cover the plumbers' business and have placed it in charge of Thos. J. Donovan of Washington, D. C., who was the intermediary through which the low rate and concessions were secured. Mr. Donovan has undertaken a herculean task in appearing before the various State conventions, now being held, for the purpose of explaining to the membership at large and in a sense educating the members to the concessions made to them. In an interview with a representative of "Domestic Engineering" Mr. Donovan was requested to give his understanding of the kinds of work covered in this policy, he said:

"General plumbing and tinning, steam, gas and other fitting and all work pertaining thereto, including setting up of stoves and ranges."

"What do you mean by 'and all work pertaining thereto'"?

"This general clause was incorporated so as to cover many features of the business in place of framing a sentence to cover all the elements of the business which would be cumbersome and unwieldy. For example, take the element of sewer work. That phrase is intended to cover the liability from an accident caused by opening a trench to make the proper connection with either the public water-main or sewer, whether the trench was inside or outside of the building line, irrespective of the distance such trench had to run whether to the curb-line or 100 ft. so long as it was intended only to make a private connection to the public mains."

"Would a fair interpretation of that clause cover general or public sewer work?"

"No, it would not, as this class of work is deemed extra-hazardous and is not the kind of work usually done by the average plumber."

"How would that phrase apply to roofing or cornice work?"

"That question was raised at the very inception of the special agreements and is covered by Question No. 4 of the application form which specifically states that 'No roofing, cornice or similar work is done,' but as many plumbers do this kind of work a special rate of 1½ per cent of the pay-roll of the particular men engaged in this hazardous work was established so that where the master plumber had a pay-roll of say $7,000, and of this amount $5,000 was paid to the men engaged in plumbing or general work in the shop, and $2,000 was paid to the men who did roofing and cornice work, then to cover all his men his policy would cost him $37.50 for the plumbers and $30.00 additional for the men engaged in roofing and cornice work."

"What is the effect of this agreement where sub-contractors are employed by the master plumbers?"

"If the master plumber wishes to cover his liability from sub-contractors, all that is necessary for him to do is to state the amount of wages paid by the sub-contractor and incorporate it in his own application, then of course he would be covered."

"What do you find the sentiment is among or by the plumbers you have met and submitted the proposition to?"

"I am very much encouraged with the unanimity of sentiment favorable to it as manifested from all parts of the country. For example, the State conventions held in Wisconsin, Iowa, Illinois, Ohio, Kansas and Indiana, which I have attended and explained the details to, have with one accord passed resolutions commending it, as did the National Board of Directors at its recent meeting in New York City, and complimented President Nolan on his good work, and in each instance appealed to their members to place their liability-insurance with our company."

"Do you find the members as a general thing cognisant of the importance of this line of insurance?"

"Well, yes and no, for the reason that many are in doubt as to whether it is intended to cover themselves personally from accident. I have had repeated questions

put to me of this tenor, and when I have explained that they must differentiate between personal accident-insurance and liability-insurance, and always remember that liability-insurance protects them from claims of all sorts as a result of accident to either their employees or the public, if liability attached to them for damages then the liability of the company absolved him and it stepped in his shoes to protect him from loss, as a consequence of a suit at law or by compromise of a claim."

"Suppose a man takes out a policy in your company and he is sued by a claimant who as a matter of fact has not got a good claim or basis for a suit, what would you do?"

"The Casualty company by the terms of its policy must and will protect him in all cases whether the suit is groundless or not, because the assured buys his policy to be relieved from just such annoyances."

"What percentage of the plumbers have taken out policies?"

"Well, is is very small as yet, for my observation leads me to believe that many plumbers scarcely realize the fact that they are in danger of having many years' earnings swept away by one accident, for the reason they have not had a serious accident in the conduct of their business and do not expect to have, yet they know accidents are occurring every day, and they cannot tell when their turn may come though I am frank to say I trust it may never come."

Is it possible for further concessions to be made than you have already got for the plumbers?"

"That I cannot tell and it will in a great measure depend upon the members themselves. When I first broached the subject of the present low rate it seemed impossible to get it, and it was finally given upon the theory that a large volume of business would be secured and the law of averages would justify it; the future alone can determine this. I might add, however, that this low rate was given for only one year, and whether the company made or lost money it would be carried out in good faith by it for the year, but you do not have to be much of a prophet to realize that if the Casualty company of America loses money the first year it would not be disposed to keep on doing so. The men at the head of it are very much like the plumber and every other business man. If he cannot make money on the plan he has adopted, but finds by actual experience he is losing money he will drop the plan and turn to more fruitful fields."

## TRADE PAPERS, BEWARE!

It is not often that such a bold-faced attempt is made to sell spurious "original" matter to the trade journals as was recently essayed by George Kopp, Cincinnati, O.

He submitted to us by mail an article entitled "The Heat Unit and Its Application to Heating of Buildings." In the first place it was sent as original, but on questioning him, also by mail, he classed it as rewritten and revised matter. Unfortunate for the enterprising Mr. Kopp, the "Sherlock Holmes" of "Domestic Engineering," discovered that the article had been presented in the form of a paper by G. G. Bennett before the annual meeting of the Ohio Association of Mechanical, Electrical and Steam Engineers. It was reprinted with proper credit in "Domestic Engineering" in the October 19, 1907, issue.

Mr. Kopp will not receive payment for his stolen goods. This will be unpleasant news to Mr. Kopp, for he took great care to have the article nicely typewritten and paid the postage on it. It is also to be noted that in his reproduction of the article not a word was out of place, not one comma omitted, and his accuracy of reproduction entitles him to a first place in the rank of copyists. Our exchanges will kindly take notice of the name and address of this editorial porch climber.

## CAPTAINS OF HEATING AND PLUMBING INDUSTRY AT HOT SPRINGS.

The accompanying picture was taken at Hot Springs, Ark., the second week in March. after a hard day's ride of seventy miles.

The picture from left to right portravs the following gentlemen: Charles Pierce, at one time secretary of the Western Tube Co., Kewanee; L. C. Huesmann, president of Central Supply Co., Indianapolis; William M. Scudder, assistant manager of Chicago branch of the American Radiator Co., and Charles K. Foster, vice-president and sales-manager of the American Radiator Co., Chicago.

Chas. Pierce, L. C. Huesmann, W. M. Scudder, C. K. Foster.

It is with regret that we are unable to show a picture of the fifth member of the party, J. R. Scanlon, a prominent plumber and heating engineer of Elgin, Ill. Mr. Scanlon is well known throughout the country as a raconteur and a poker player. (He stopped by the wayside to gather chips.)

These gentlemen are famous riders and have an organization (surpassing Roosevelt's Rough Riders), known as "Pierce's Peerless Pathfinders."

Mr. Scudder rode rough at El Caney and Mr. Foster rode rougher at Hot Springs last year. Mr. Foster tells us that the hotel proprietor disregarded his specification for a mount and brought him a razor back horse from the hills.

Hot Springs is gaining in popularity as a rendezvous for the heating and plumbing trade.

## WILL OPEN BRANCH FACTORY AT SEATTLE.

The Oscar Krenz Brass & Copper Co., 212 Fremont St., San Francisco, Cal., is preparing to open a branch factory at Seattle, Wash., at a cost of $50,000. The new plant will be located at the corner of Sixth Ave., South, and Holgate, in that city.

# The New Heating Station of the University of Wisconsin*

By H. J. Thorkelson.

The deep interest of the state of Wisconsin in their university at Madison is manifest in a great number of ways. They not only provide the necessary funds for its maintenance but they have a deep and abiding interest in its welfare and frequently lend their moral support and assistance in furthering its usefulness.

The strength and character of this institution is a source of pride to all of us and its reputation is not only national but international in extent. In consequence of this, the attendance from our own and other states is constantly increasing and the enrollment from foreign countries is growing larger each year.

It may surprise some to hear that the Engineering College has students from China, Japan, India, Persia, Turkey, Siberia and many European and other foreign countries. Those of us, who are members of the faculty, do not fully realize the growth and extent of the institution and the many and varied problems met by the regents in providing the necessary buildings, equipment and other facilities and in maintaining these efficiently and economically.

In order that some of the features affecting the subject under discussion may be better appreciated, a diagram has been prepared (Fig. 2) showing the enrollment, cubical contents of buildings, and boiler capacity at the university from 1885 to the present year. Previous to that time the heating was obtained from stoves, furnaces and other systems in the separate buildings, and data covering that period is not of immediate interest.

The late Professor Storm Bull was identified with this work from about 1890 until his death two years ago and the successful solution of the problems met during this period and the plans for the new station and equipment are the result of his work.

The slope of the various lines shown in Fig. 2 show the relative yearly ratio of increase and it may be of interest to know that the average ratio of the heating surface to the cubical contents of the buildings has been maintained fairly constant, although the ratio of direct to indirect radiation differs materially because of the different nature of the buildings erected at different times. The average ratio is practically the same as the average ratio for the various buildings heated by the Milwaukee Central Heating Co. It must be born in mind, however, that most of the university buildings are very much exposed to the winds from the north sweeping across Lake Mendota.

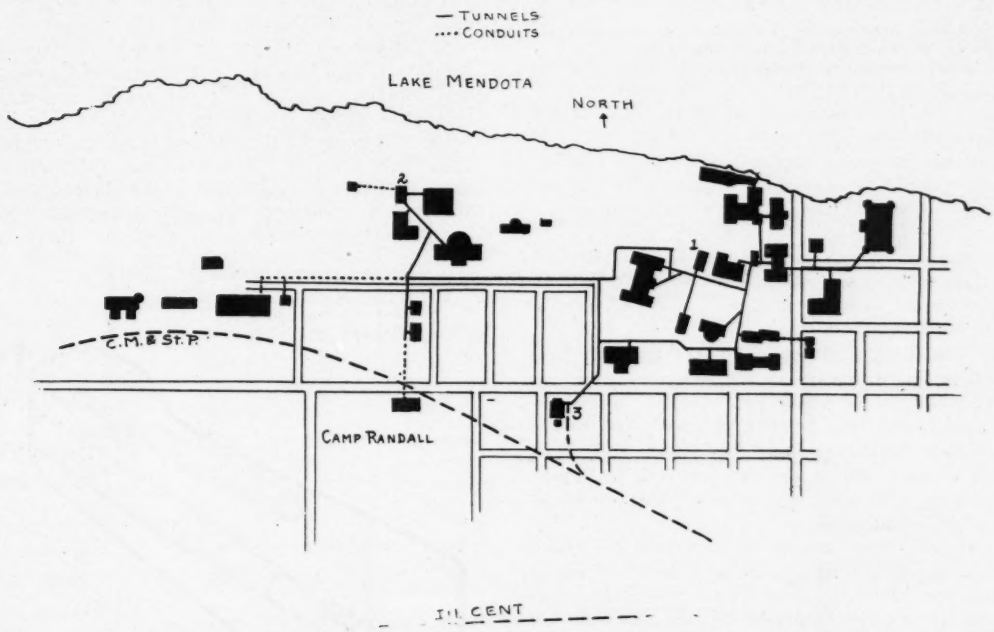



Fig. 1. Map of Steam-Distribution System of the University of Wisconsin, Madison, Wis.

The plant when first constructed was connected to only a few of the university buildings and later extended in size and capacity and connected to other buildings. In fact it was not until 1898 that practically all the buildings on the eastern or upper campus were so connected. The first boilers installed were 50-h. p. units but, as additions were required, larger and larger sized units were selected and when in 1906 the installation of more and larger engines in the steam, electric and hydraulic laboratory necessitated more boiler capacity, it was decided to

*Address given before the Engineering Society of Wisconsin, Feb. 25, 1910, at Milwaukee, Wis., by H. J. Thorkelson, of the Department of Steam and Gas Engineering, University of Wisconsin.

purchase a 350-h. p. water-tube boiler, which was moved to the new plant in 1908 and four additional boilers of the same capacity installed there.

The exhaust from all the engines available is utilized for heating three of the university buildings and if an electric-power station were erected for generating all the electricity needed at the university for light and power it would be possible to heat more buildings in this way. The load factor, however, will be very low and it will

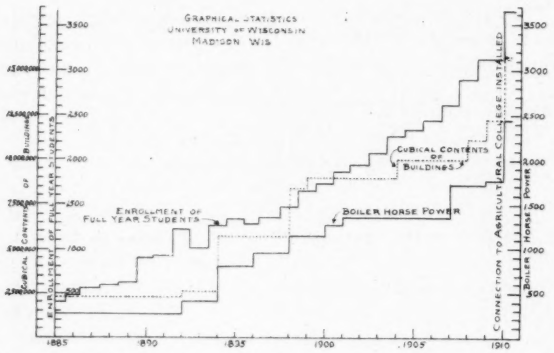



**Fig. 2. Graphical Statistics of Enrollment of Students and Cubical Contents of Buildings Heated at the University of Wisconsin.**

always be necessary to furnish most of the heat needed by "live" steam.

It is not generally known that it is practical to economically transmit steam for any great distance. In fact one writer in discussing the subject of central heating stations in 1895 states: "The chief difficulty, then, lies—— in the distribution. This difficulty moreover in the light of varied experience of the past is practically insurmountable, and forms, for most conditions, a vital objection to steam as a distributing agent."

The high insulating qualities of modern types of pipe-coverings together with care in the designing and construction of pipe-lines have, however, overcome this objection. As proof a test may be cited of 1,200-ft. steam line installed in Milwaukee by Prof. Mead and Mr. White for carrying steam at 110-lb. pressure and 100 deg. superheat, which showed an efficiency of transmission of 97 per cent.

In order to give some idea of the length of the transmission lines at the university a map is shown as Fig. 1 representing the university grounds and buildings. The length from east to west is practically one mile, the left hand, or western, group of buildings being used by the College of Agriculture and the right hand, or eastern group, by the other colleges of the university.

1. Represents the location of the original heating station erected in 1885 and enlarged twice since then. 2. Represents the heating station erected in 1896 for the College of Agriculture and, 3, the location of the new central heating station, which has been heating the eastern group of buildings for over a year, has just been connected to the agricultural group, and is now carrying part of these buildings and in a few weeks will carry the entire steam-load of the university.

It will be noted that buildings 1 and 2 are well located for the purpose intended. Still the new station 3 is fully as centrally situated for its work and has the additional advantage of railroad facilities, effecting a saving of fully 25c per ton for hauling coal. As the university consumes over 16,000 tons per year, this item of itself is quite important.

Most of the heating lines shown are in tunnels although part is conduits. These tunnels are of the open-cut construction and vary from about 7x7 ft. to 6x6 ft. in cross-section and cost on the average $8.00 per ft. The steam and return lines, which are of wrought-iron, together with the necessary anchors, supports, expansion joints and insulation will average an approximate additional $12.00 per ft., making the total cost about $20.00 per ft.

The present plan is to construct all main lines of tunnels with laterals leading to the buildings of conduits. It has been possible to lay out these tunnels so as to connect to the older systems conveniently and economically. Future tunnels, when needed to accommodate future buildings, will be laid out in such a manner as to obtain a very direct path for the steam and at the same time secure eventually a loop from the power house and one for the eastern and western group of buildings. This will give a very reliable transmission-system and one that can be cut out at different points for repairs with very little inconvenience.

The original heating station had two distinct systems of pipe-lines. One at 100-lb. pressure for the laboratories and pumping station and the other at about 50-lb. pressure for the heating systems. The new system is now carrying about 115-lb. at the station, distributing at this pressure with a loss of about 3 per cent to the most distant buildings and to the old station where it passes through a reducing valve to the old heating lines. All heating systems in the various buildings are reduced to about 5-lb. pressure. This plan has materially simplified the installation and operation of the plant, and as the new boilers and power-house piping is designed for 150-lb. and over, it will be possible to furnished this pressure if

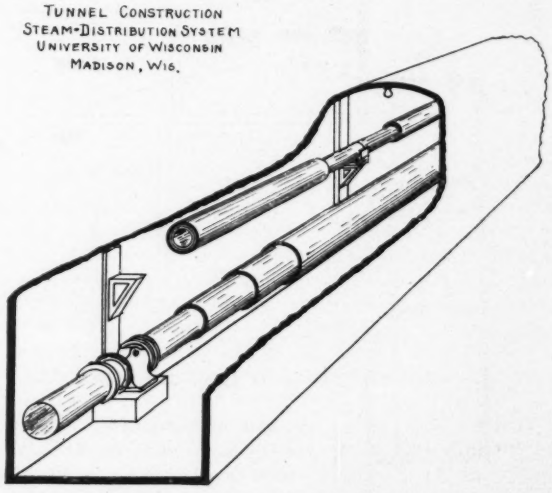



**Fig. 3. Sectional View of Steam-Distribution System.**

needed should a new steam-laboratory or power-station require it.

A cross-section and perspective of the new tunnels is shown as Fig. 3. The lower pipe-line is the steam-line and the upper pipe-line for returned condensed steam. The anchors, expansion joints and outlets are combined in one fitting, which is the American District Steam Co.'s pattern. The pipe is supported at intervals of about 10 ft. by brackets fastened to I-beams, laid in the walls which are of concrete with reinforcement of rods

on the side and heavy steel wire net or lattice for the roof. A saddle is fastened to the pipe at the supporting points and balls between this and the bracket afford ample freedom for expansion. The insulation used consists of two thicknesses of 1¼-in. 85 per cent magnesia, laid with broken joints and covered with ¾-in. of impregnated felt. This is covered with canvas glued with silicate instead of starch to keep out the rats. The line-covering is then painted and a standard color scheme has been adopted for this work. The lines installed last year had cast-iron flanges and corrugated copper gaskets, but the lines installed this year have forged-steel flanges and wire-inserted seamless asbestos gaskets. It is believed that the added safety and security well warrants the additional expense.

These tunnel lines are now used for telephone cables and when electric distribution lines are installed they will be placed in conduits at the side of the tunnel.

Compressed air is used for controlling the room temperature in the various buildings and this is distributed through the tunnel by a line leading from a compressor located at the heating station.

Figs. 4, 5 and 6 show the plan, longitudinal and cross-section of the new heating station, which is 114 ft. in length, 85 ft. in width, and 100 ft. to the gable. A pump-pit in the basement furnishes the entrance to the main tunnel and contains the pumps and heater. Storage tanks are also provided for the return-water and automatic valves are placed on the heater. These are so connected as to draw from the tanks and when this supply is exhausted a valve leading to the raw-water supply is opened. The exhaust from pumps, stoker, engines and air-compressor lead to the heater and the feed enters the boiler at a temperature of about 200 deg. F.

Four new B. and W. water-tube boilers, having vertical steel headers, were installed last year which with the boiler moved from the old plant gave a capacity of 1,750 h. p., or 50 h. p. more than the old plant. With the completion of the new Woman's Gymnasium and the connection to the agricultural group of buildings, two more boilers of the same type and size have been erected and will soon be in operation giving a total capacity of 2,450 boiler h. p.

The chimney, which is of the Custodis construction, is 250 ft. in height and 14 ft. in diameter, and is designed of sufficient capacity for 6,000 h. p., which will be needed when the present building is filled with boilers and an additional boiler-house erected at the south side of the stack.

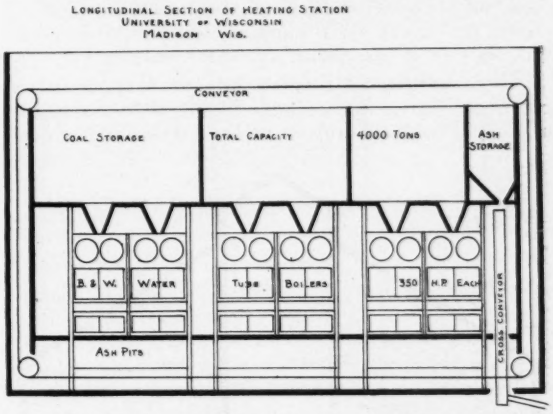



**Fig. 5. Longitudinal Section of Heating Station at the University of Wisconsin.**

The coal burned is Illinois coal, containing from 35 to 40 per cent volatile matter, making smoke prevention very difficult. Roney stokers of the improved type are installed and quite satisfactory results have been secured. The new boilers just erected will have a longer combustion-arch and with a number of improvements in the stoker and furnace-construction, still better combustion is anticipated.

A smoke-recorder will soon be installed and when in

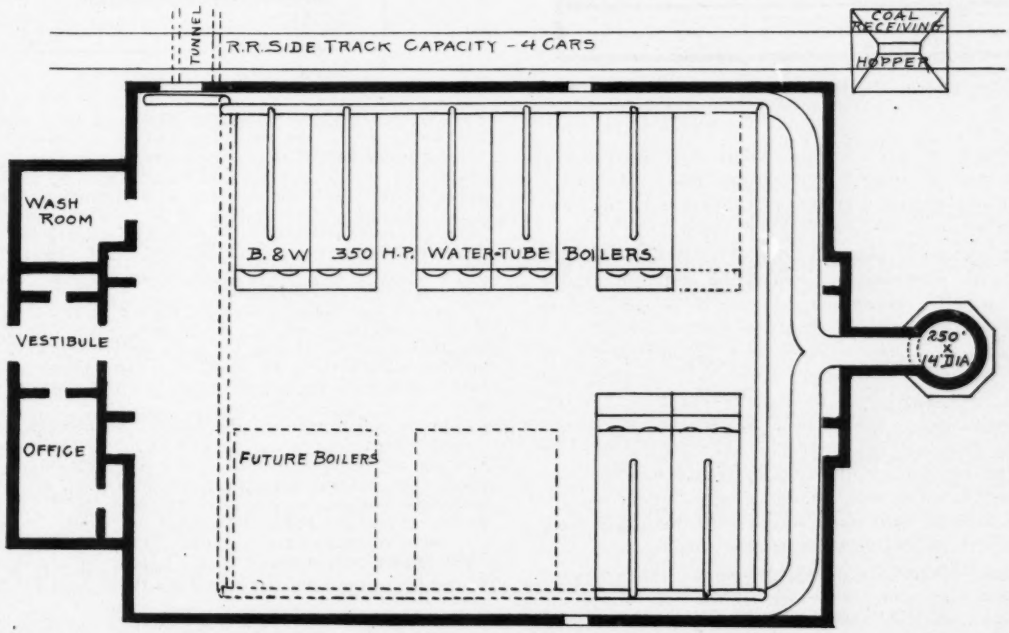



**Fig. 4. Plan of Heating Station, University of Wisconsin, Madison, Wis.**

operation the fireman will be better able to operate the furnaces. The plant is equipped with a recording steam-gage, and a recording Venturi meter measures the water evaporated from day to day, giving an indication of the load carried at the plant and assisting in distributing the load on the boilers economically. Tests show the new plant to be more efficient than the old one and the results of various tests compare very favorably indeed with tests of similar plants at other institutions.

The university coal contract is let on a B. t. u. basis and in paying for the coal the weight at the university scale is used. Practically all the coal is received in dump

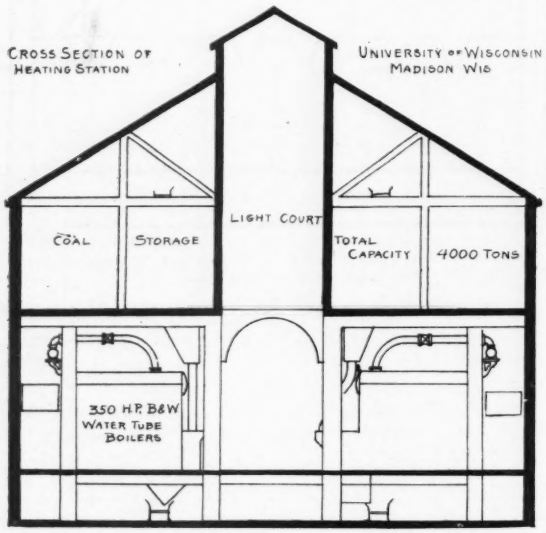



**Fig. 6. Cross Section of Heating Station at the University of Wisconsin.**

or hopper-bottom cars and this coal is very conveniently unloaded into a track-hopper, from which it passes through a crusher and a system of conveyors to the storage bins above the boilers.

These bins have a total capacity of 4,000 tons and are provided with partitions for separating different grades if desired and for convenience in handling fires should the coal heat and ignite. During the summer time a very fine size of coal is used and the cost of putting this in the bins, including labor and power for operating the conveyors, will average 3 to 4 cents per ton. In the winter time a larger size is used to reduce the expense of getting coal out of the car. As the coal used is washed, the problem of freezing in severe weather is a serious one, and the cost of unloading is frequently increased to 8 to 10 cents per ton, but with the larger sizes of coal this trouble is very materially reduced.

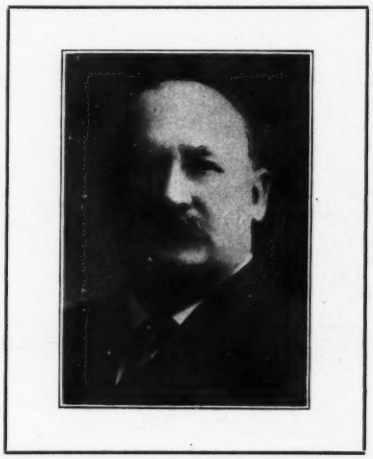
The same system of conveyors remove the ashes to storage bins from which they are removed by wagon or car. As the university receives 60 cents a yard for these cinders from sidewalk contractors the cost of removing ashes is practically nil.

It may be of interest to note that the investment in the building, site and chimney is approximately $110,000; the equipment approximately $70,000; and the tunnels $70,000; making a total of $250,000, which has been expended by the University of Wisconsin in the past three years in making the changes and improvements described.

## MISSOURI MASTER PLUMBERS MEET AT ST. JOSEPH.

The Missouri State Association of Master Plumbers held its annual meeting at the B. O. P. Elks hall in St. Joseph, Mo., on March 22 and 23. The meeting was a most pleasing success, though the attendance was not large, but taken as a whole it was an important meeting. About fifty delegates were present. St. Louis, Kansas City, Springfield, Sedalia, Joplin, Poplar Bluff, Webb City and St. Joseph were represented.

The convention was opened by C. P. Farrell, president of the St. Joseph Master Plumbers' Association, with a very appropriate address. He then introduced Wm. Ryffel, president of the Missouri State Association, who called the meeting to order. The credential and auditing committees were thereafter appointed. The Honorable Mayor of St. Joseph, Thomas Clayton, arrived at this point and addressed



**Wm. Ryffel, of St. Louis, Mo.**

the meeting with an excellent speech of welcome, turned the key over to the master plumbers and concluded by telling them that if they found anything nailed down and wanted it to call on him and he would chop it loose for them. His speech was greeted with enthusiastic applause.

The afternoon was taken up by the consideration of several trade resolutions. Tuesday evening St. Joseph Master Plumbers gave an old-fashioned Dutch banquet, which was heartily enjoyed by all the members and lasted till early the next morning.

Wednesday morning session opened at 10:30. The new liability-insurance offered the leading topic for discussion for this session. It was voted to be recommended to all master plumbers, who wish to avail themselves of it, and it met with the hearty approval of the members present.

The annual reports of the officers were thereafter read.

The afternoon session opened at 2:30. Officers for the coming year were chosen as follows: President, Arthur McKinley, Kansas City; first vice-president, R. P. Davidson, St. Joseph; second vice-president, E. C. Reisel, St. Louis; treasurer, James P. Carroll, St. Louis.

Executive committee: Arthur McKinley, Kansas City; Wm. Ryffel, St. Louis; E. C. Reisel, St. Louis; James P. Carroll, St. Louis; Dan Bolton, Webb City; J. A. Spillman, Rolla.

It was thereafter decided that the next annual meeting shall be held at Kansas City.

The meeting thereupon adjourned sine die.

E. D. Draper, secretary of the State Association of Kansas Master Plumbers, was present and made a very interesting talk on the general good of the trade.

National Director Jeremiah Sheehan of St. Louis, was present on behalf of the National Association and made a very interesting speech pertaining to the trade.

Last, but not least, the convention was graced with the presence of Tom Watts of Kansas City, Kan., who attended for the special purpose of teaching all the "boys" how to run the business and make money.

DOMESTIC ENGINEERING

THE OPEN DOOR TO WEALTH
IN HEALTH

TREATING SPECIFICALLY ON
SANITARY PLUMBING
HEATING
VENTILATING
STEAM-FITTING

ITS ESSENTIAL AIMS ARE THE ADVANCEMENT OF PRIVATE AND PUBLIC CLEANLINESS AND COMFORT AND THE FURNISHING OF STIMULATIVE EFFORT TO THOSE ENDEAVORING TO OBTAIN PERFECTION IN NATIONAL SANITATION.

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NOTICE TO ADVERTISERS.

Copy and cuts for advertisements intended for a particular issue should reach the office of Domestic Engineering on Monday of the previous week if it is desired that a proof of the advertisement shall be submitted. New advertisements can be received up to noon of Monday of the week of issue, but no proof can be shown.

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## SPECIAL NOTICE TO READERS.

**Our readers are invited to send in articles on any topics covering sanitary interests as outlined above. Photographs and drawings with descriptions of special interest to plumbers and steam-fitters are welcomed. "Domestic Engineering" pays at space rates for all articles, notes, criticisms and news data so contributed.**

## CONVENTION DATES.

Apr. 5, 6 and 7, 1910.—Annual joint convention of the American Supply and Machinery Manufacturers' Association and the Southern Supply and Machinery Dealers' Association, in Jacksonville, Fla. Headquarters at the Seminole Hotel. Alvin M. Smith, Richmond, Va., secretary and treasurer of the Southern Association.

Apr. 11, 1910.—The annual meeting of the Association of Master Plumbers of the State of Arkansas, at Fort Smith, Ark. Headquarters at the Hotel Goldman. Secretary W. H. Bruce, Fort Smith, Ark.

Apr. 26-30, 1910.—The 30th annual convention of the American Water Works Association at New Orleans, La.

May 3 and 4, 1910.—Annual convention of the Pennsylvania State Association of Master Plumbers, at Lancaster, Pa. Convention meetings in the Orange Street Opera House. Headquarters at the New Stevens House. President, Charles L. Titus, 37 Morgantown Street. Uniontown, Pa.; secretary, Harry L. Burd, 85 Gallatin Ave., Uniontown, Pa.; treasurer, John H. Birchall, Allentown, Pa.

May 10, 1910.—Ninth annual convention of the New Jersey State Association of Master Plumbers, at Paterson, N. J. Sessions in the Miriam Barnet Memorial School, corner Broadway and Erie Railroad. Officers: President, Geo. S. O'Neil, 41 Bridge St., Paterson, N. J.; secretary, Henry F. Baillet, 191 Clinton Ave., Newark, N. J.

May 11, 12 and 13, 1910.—The fifth annual convention of the National Suply & Machinery Dealers' Association and the eighth annual convention of the American Supply & Machinery Manufacturers' Association, in Atlantic City, N. J. These conventions will be held cojointly.

June 21 and 22, 1910.—Annual convention of the National Association of Brass Manufacturers, at Atlantic City, N. J. Commissioner, Wm. M. Webster, 1112 Schiller Bldg., Chicago.

June 28, 29 and 30, 1910.—The 28th annual convention of the National Association of Master Plumbers, in Chicago. The officers of the association are: President, Walter D. Nolan, 721 14th St., N. W., Washington, D. C.; vice-president, A. Selden Walker, 341 Main St., East Orange, N. J.; secretary, Samuel Artz, 3028 M St., N. W., Washington, D. C.; treasurer, William McCoach, 1607 Sansom St., Philadelphia.

## PERSONAL MENTION.

Robert A. Regester, Baltimore, Md., has severed his connection with A. Weiskittel & Son Co., Baltimore, but will continue to be associated with the plumbing and heating trades in the future.

Robert H. Kieserling, of the Crane-Hawley Co., Cincinnati, O., is receiving congratulations from his many friends in the trade on account of his marriage to Miss Emma Gampfer, of that city. The wedding took place at the home of the bride's mother, Mrs. Marie Gampfer, in Cincinnati on Saturday, March 26, 1910.

# BUSINESS MANAGEMENT

## NEW METHODS FOR OLD

### WHAT IS THE PROPER PERCENTAGE FOR "OVERHEAD EXPENSE"?

Editor "Domestic Engineering":—I notice in your paper mention of the "overhead expense" charges in running a shop.

I would like to know if you can give me any information as to what per cent this amounts to and wish you would publish this letter in your new department, as perhaps some one may write in upon the subject.

Philadelphia, Pa. Wantewno.

As a class we have noticed that many of the shops do not seem overly anxious to share their knowledge along the expense and estimate line.

However, here and there, throughout the country there are men who don't have to be afraid of telling others points of benefit to the craft in general. They don't fear because they are big enough and fair enough to try and show others their mistakes and are generous enough to desire to help others in the same business instead of trying to freeze their competitors out. In other words, they "boost instead of knock." Men of this class, with whom we have at various times conversed, state that the overhead expense of the business runs anywhere from 15 to 30 per cent and that a fair average would run somewhere between 20 and 25 per cent.

This we should think would depend somewhat upon the locality, the business ability of the man himself and his natural tastes.

From those who desire to express themselves upon this very interesting and exceedingly vital point of the plumbing and heating business we should be glad to hear and to print their replies.

### WHERE SHOULD HE GO?

Editor "Domestic Engineering":—I notice in your advice to "C. V." in your Business Management department of March 12, 1910, that you make some remarks from which I should like to differ.

You state that "there should always be in sight enough reserve funds to carry on the business one year without making a cent."

Now, I would like a vote (were it possible) of all the plumbing and heating shops in the country who have started (and are now in business) in the past twenty-five years and would like to count the hands that would be raised of those who started under such conditions then, or now, or at any time between dates mentioned.

If men who have both the desire and knowledge of this business waited for such conditions there would be mighty few to engage in it. Not enough to dispose of one-tenth of the goods turned out by our manufacturers who must sell their goods.

As a matter of fact, there are many places west of the "Father of Waters" where a man can start in this business if he has got a mere "grub-stake."

It does not require a million, thank goodness, to get into it and make a living, so be it that the party exhibits a bit of common sense and practical wisdom and refrains from "biting off more than he can chew."

I won't deny that your suggestion would picture forth conditions quite ideal, but they are certainly not necessary if "C. V." or anybody else has the proper amount of "go" in their system. There are hundreds in this business who started with little more than a kit of tools and a few bundles of pipe who today are in fairly good circumstances as such matters are now considered. There is not today nor will there be for some time to come enough money to do business on a cash basis. So, if our friend "C. V." has a "grub stake" upon which he can chew for a few months I would advise him to get out of his present locality and follow Horace Greeley's advice and "Go West." There are yet a few places where he can locate and run the risk of getting struck with success. What's the matter with the Northwest and the whole string of new towns that are springing up along the new railroad lines that are being built and have been built during the past two years? Take the whole great West as a unit, anyway, and there are about sixteen chances to every one that can be found in the eastern towns.

This will apply not only to our craft, but pretty nearly to everything else. Come on, "C. V." A faint heart never won a fat lady. Pack up your grip and hit the pike for the land of the setting sun. You sure never will regret it.

Pacific Coast. Y. Y.

Our correspondent Y. Y. from the Pacific Coast has evidently misunderstood our answer to C. V. in "Business Management," March 12, 1910. We replied to C. V. "There should always be in sight enough reserve funds to carry on the business for one year without making a cent."

Y. Y. should note that we referred to going into "business." We were not talking about playing marbles, or building castles in the air, or making mud pies. We were contemplating business with a capital "B."

Y. Y. in his reply gives his case away by seeking a vote from all the plumbing and heating shops in the country who have started in the past 25 years, and who, he says, "are now in business." Presumably, they were not in business when they started. It would be interesting also to be able to obtain a record of those who shipwrecked, because they started in the plumbing business without capital.

We would like to draw a distinction between earning wages, drawing a salary, and owning a business. Y. Y. evidently thinks that all these mean the same thing. Many plumbers are satisfied with thinking they own a

business, whose chief asset is a long-time credit, whose main product is a series of unpaid bills and bad debts, and whose ownership barely enables them to draw the same wages as their best workmen. They seem content to be in the same position as the Italian who was hired out for $1.00 a day to dig a sewer. When the boss came around he found the "dago" sitting on the curb smoking a six-inch length of putrified cabbage, and giving vehement orders to an Irishman who was working away with a shovel as though his life depended upon it. The boss said to the Italian, "I thought I hired you to do the work." "Yes," said the Italian, "Me make contrac', but me sub-contrac' to Irisher." "Well," said the boss, "How much do you pay him for his work?" "Me pay him $1.75 a day." "But," said the boss, "You are losing 75 cents." "Yes," said the Italian, "Me lose 75 cent, but me boss." Probably Y. Y. would contend that the Italian was in business. Editor.

## AMOUNT OF GAS BILL.

Editor "Domestic Engineering":—I had a chance to sell a gas-range the other day and fell down on it because I had no accurate information as to the amount of money per month the stove would cost for consumption of gas. If you can give me any figures I would certainly be glad to have them on hand so as not to get scooped again.

Milwaukee, Wis. L.

The writer has a gas-range in his own flat and the gas costs, I think, 90 cents per thousand feet. We also, at times, use the gas for lighting purposes in order to cut down the electric light bills. There are in our family three persons. Now for baking, washing and ironing, getting three squares per our gas bill for last month was $1.40. Some months it has gone to $1.55 and others dropped to $1.20. I should say that about $1.35 per month would be a fair average, of which amount I believe the range alone would consume from 90 cents to perhaps $1.05. I should think that $12.00 would be entirely sufficient to run the stove for a year, and with hard coal at from $7.50 to $8.00 a ton, as it is here in Chicago, you can easily make your own comparison in the way of coal stoves vs. gas-ranges.

## WHAT IS IT THAT BEGINS AT HOME?

Editor "Domestic Engineering":—I was very much interested in reading the letter by "Spencer" from Owen Co., Ind., in "Domestic Engineering", March 12, 1910, and I noted with pleasure that they seem to be trying to wake up in Indiana. There is an old saying that "Charity begins at home," and I think that self-betterment also does.

We plumbers must learn to help ourselves. It's a cinch that no one else is going to do it for us, as past times have proved. Instead of talking about getting together, why not write to the secretary of the state association and get a special meeting called. Every plumber who reads this letter should write. Don't wait for some one else to make a move; do it yourself.

That is the great trouble—everybody waiting for some one else to do something, which never gets done.

For instance, there are probably ten thousand or more readers of "Domestic Engineering". Now, suppose that every one of these readers started talking about and pushing certain questions. Take any question, for instance such as, the abolishment of the cesspool or the requirement of a properly qualified license to do plumbing and heating or a proper sanitary law for each city, town and village. Let the "boys" all write to their state and national representatives and keep digging away. Do you not see the ferment that would arise? A dead-quiet, self-satisfied feeling or a state of coma is not conducive to the improvement of our trade or business and it surely needs improvement along many lines, but it can only come when the craft awakens and gets busy stirring up the general public.

There are some who would not want this, but they are the people who should be out of the business entirely, as they are only a drawback and a detriment to it every day they continue to do business.

Any man who would take a job, seeing in it merely $2 a day for his work, or profit, ought to be digging a ditch by the side of people who are naturally in his class. Why, a good self-respecting helper in many sections of our country would feel himself insulted by being offered $2 a day for his services, and rightly so, too. The proper thing to do for those parties who got "stung" by grabbing up hot-water jobs at bargain-counter prices is to take them around and educate them a bit. No matter, "Spencer," if you did not get their work, lay any matter of feelings in the affair aside and get hold of these parties one by one and take them to some place in your town where you have some heating jobs that are giving satisfaction.

Don't ask the parties to take your word, but make your satisfied customer do the talking. Show them how much coal has been burned and the results it produced.

Now, should the party who has been "stung" ask you to fix over his job do it, but charge just the same reasonable profit that you have always asked and make a friend out of that man and stop his talk regarding the efficiency of stoves and hot-air furnaces.

By using some tact and common sense along such lines and in dealing with these failures we can prove that steam and hot-water heating systems are not failures, but are the best means of heating on the market and are always worth the price asked by any man who knows the business.

Louisville, Ky. "Kentucky."

## THE PLUMBERS AND THE PRESS.

Editor "Domestic Engineering":—I noticed that in a former issue, March 12, you published several items verbatim from clipping of the newspapers of the country. I think it would be a mighty good thing if you bunched a lot of such dope on one full page once a month in a corner of your paper.

Looks like it would be a mirror in which the plumber could see himself as others saw him.

Give us some good points as well as bad for the Lord knows the plumber gets a "knock" about every time he turns around. Observe the article published in the "New York Herald" to which you allude so fair-mindedly and frankly in your editorial of March 19th. Now maybe you don't see the real effect such a cussedly would-be funny article has on the public.

That josh will do more harm than us plumbers can do good in a year's time.

Every blamed crank and knocker will sharpen up his wits and get ready to give the business another black eye. Their suspicions will have been strengthened and I'll bet a lot of plumbers in New York state will have some difficulty in collecting their just bills this spring.

If it was the truth, if plumbers and fitters were really rich, we could afford to laugh but the facts are, as everybody knows, that we are doing business on a smaller percentage of profit than almost any other line of business. I see nothing funny about that New York Herald article. The pity is that some one could not get next to the author of it and post him regarding the real facts of the case.

Justice.

## WHY NOT START A FACTORY-AND-SCHOOL CAMPAIGN—YOURSELF?

Editor "Domestic Engineering":—While reading the very excellent comments and suggestions in the new department of your paper, it has been borne upon me that we could all do something towards booming the plumbing business, if we got out and hustled in our spare time this year along certain lines. Make a concerted attack upon certain points of neglect and ignorance which are so very prominent in certain localities.

Now, why not let each and every plumber go for the public schools and factories in his neighborhood, that need better plumbing and more of it? There are thousands in the United States and the amount of business that this would create both individually and collectively would amount to a large sum in the course of a season's work.

I know that I am sure of at least one job that I would not have got if I hadn't been gunning in this fashion, and I have it at a good profit, too. There are many factories in the land where the sanitary accommodations would put to shame any self-respecting dog. Likewise there are schools in communities which call themselves modern and up-to-date, where the sanitary arrangements are far enough behind the times to be relegated to the dark ages of plumbing.

Therefore, I say, before the season opens up brisk, go to it and see what you can get along this line of factory-and-school sanitation and you may surprise yourself by landing several unexpected jobs.

St. Paul. T. A. B.

## THE PLUMBER'S PROFITS.

By A. P. Elder, Ottawa, Kas.*

This important subject having been assigned to me by our secretary, I will endeavor to present a few facts that must be apparent to all; but which probably will be entirely ignored when the next job is figured. However, I think that the rocks that lie in the course of a ship should be marked so that the wise mariner can avoid them, even if the reckless shippers pay no heed to the danger.

There are three items that enter into the cost of every undertaking, material, labor and expense, and they must be carefully ascertained and provided for. An estimate book is indispensable and a careful check should be kept upon all contracts to ascertain just how near the estimates came to the final cost of the work. This is a healthy guide to assist in figuring the next job and will usually show that many items are omitted from every estimate which finally have to go in and be paid for by the contractor.

The greatest stumbling block in the plumbing business, however, seems to be the difficulty in figuring overhead or fixed expenses of running a business. This item varies but is "Like the poor always with us," and it should be carefully computed and the percentage of expense should be added to every contract. In a business that aggregated $7,500 last year this would most likely mean that the expense account would look something like this: Rent, $300; bookkeeper, $600; horses and wagon, $180; telephone, $120; water, light and fuel, $100; charity and subscriptions, $50; advertising, insurance and incidentals, $150; total $1,500. This shows 20 per cent of the receipts go for expenses of various kinds necessary to run the business, so that in making up an estimate of cost of all undertakings after the cost of the material has been ascertained and the labor computed 20 per cent of the aggregate must be added to get the bare and actual cost of the job.

It is up to the plumbing contractor to determine what constitutes a reasonable profit that will provide a competency for declining years upon the business under consideration.

A man starting in business at 21 should for the next 29 years, if possible, lay by $1,000 per year in order to have a sufficiency to maintain himself during the rest of his lifetime, so that at least 15 per cent should be added to each job after having computed as above stated, the material, labor and overhead expenses.

Supposing the items are as follows: Material, $100; labor, $40; overhead expenses, $28, or a total of $168, add then 15 per cent or $25, and we have $193 as the lowest safe and fair proposal to make; if you do not provide the item of $28, you will surely fail in time and if you do not provide for the item of $25 you will find yourself at the age of 50 years with earning capacity greatly impaired and no provisions for a future that may last 20, 25 or 30 years.

It is every man's duty to provide an education for his children and assist them to a start in life and to provide a fund to care for himself and wife in old age. How many plumbers are doing this? Dun and Bradstreet show that but a small percentage of the plumbers have any rating at all, and it is the rarest thing to find a plumber with a rating above $10,000. This should not be the case. The business is the most favored of any I know of. Thanks to a strong association the business has so far been kept largely in legitimate channels, hence the whole blame for the above conditions must be placed upon the lack of business foresight on the part of the plumber himself.

If the plumbers only would study the methods of the banker, lawyer and the doctor and mix more with his competitor, rid his mind of petty jealousies and always keep in mind that his business must show a profit or final disaster will be the result—a great step in the right direction would be made.

For your information I would call special attention to the fact that if your expenses are 25 per cent of your gross business and you add 25 per cent to every transaction you are actually losing 5 per cent. In conclusion I would like to urge a careful study of the following table:

Cost of doing business, 20 per cent on gross sale.

Goods marked above cost, 25, 33 1-3, 40, 50 and 100 per cent.

Actual per cent profit, 5, 8, 13 and 30 per cent.

In business the Darwinian theory is being proved every day: "The fit only survives."

* Paper read at the annual convention of the Kansas Master Plumbers' Association, held in Kansas City, Kan., Mar. 7 and 8, 1910.

# A Job Which Was Slated to Fail, But Did Not.

By Phoenix.

Several years ago, in the country of the Mohicans, an old farmer, who had laid by a fair wad of the worldly goods, decided that he would have a steam job similar to that of his son, who lived in Buffalo.

Now the stick of the whole business was that the farmer's cellar was a very low one, and as the boilers of that day couldn't very well be turned on their side and work, and the farmer naturally objected to jacking up his house, there was only one remedy left, namly, sink the boiler in a pit. Right here the old lady appeared on the scene and in a high and no uncertain voice objected mightily to having a hole "busted" in the cement cellar bottom. So at that point the heating contractor departed because he saw that he could not get any pitch on his steam pipes and figured that the job would fail anyway. Finally one day our boss drove out and looked the job over mighty carefully and coming back said: "I'm going to tackle it, for I believe I can make it work. It's a snap, all but the pitch." So the next Monday the old farmer appeared with a couple of lumber wagons and teams to haul us out to the job.

The fitter and I helped load up, the pipe, radiators, boiler fittings, tools, etc., and finally we got started, arriving at the farm house in time for a "filling" country dinner. We put all hands to work distributing the goods as nearly as possible in their proper places and then set up the boiler in about an hour's time, and mixed up the mortar for the mason to use in the morning. It was a steam boiler which had to be set in brick.

As darkness came Tuesday evening the boiler was bricked up and we had all the holes cut for the piping, tools laid out and the bench set up ready for business Wednesday morning. The mason took back to town the measurements for the smoke pipe, which the farmer got for us on Thursday evening.

Now we piped the radiators, seven in number, in two days and on Friday and Saturday we bronzed the radiators, covered the pipe and tested out the job, leaving for home on Saturday evening full of pie and chickens and the farmer was highly pleased. As the years have passed, I have kept an eye on this job, because it was predicted by one of the competitors that it would fail, but instead of failing it has turned out to be one of the best working plants in that part of the country.

This residence was figured on the old rule of "40 to 1" with the exception of the hall in the second story which was figured stronger as it had to warm the two bedrooms and sometimes "take the chill off" the store-room. The bath room also had about 10 per cent additional radiation to guard against failure of heating properly.

Now this job had to be guaranteed to heat 70 deg. when mercury showed 20 below zero outside; which in every instance for a period of over sixteen years it has done.

This job heats the house thoroughly on less than one quarter of a pound of steam and never, during the entire time it has been installed, has it been necessary to make the gage register in order to heat the house sufficiently. The steam main is two in. in size and the lowest point is directly over the boiler.

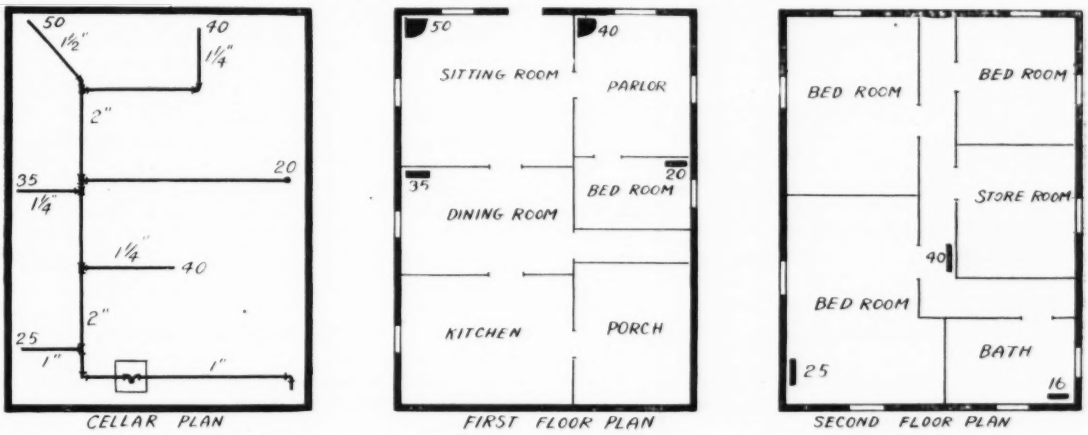



Fig. 1. Rough Plan of Heating Installation, Which Was Scheduled to Fail, But Did Not Do It.

The feature in this job which condemned it in the eyes of the wise guys, who said it would fail, was the pitch of the mains which is only one-eighth of an inch in ten feet. Not only that, but the condensation returns against the steam as it must, since the highest point is farthest away from the boiler and no wet returns are used.

They said, the job would hammer and pound and that the radiators would be pushed full of water, "but not." This job will heat up easily and without a sound in half an hour's time.

The fuel used in the boiler is hard coal with a banked fire and the amount burned all these years has been from four to six tons per year varying according to the severity and length of the season.

I said season advisedly, for sometimes even in the summer when there is a cold rainy raw day, the owner will build a fire in the apparatus and warm up the house. When we first ran the main we used a tee as shown, and started the steam out of each side, but before completing the main we decided to change in order to make the main hang easier and fixed it according to the drawing which represents pipes on leaving tee at top of boiler, as if you were looking down on top of the boiler from above.

The kitchen was left without any radiator and the two front bedrooms in the second story were warmed from the 40-ft. radiator in the hall. This radiator should more properly have been placed at the front end of the hall but the owner objected to having the pipe pass up through either the parlor or the sitting room and so we placed it, as shown, where it has always furnished heat enough to warm the bedrooms for the family.

This is not a large house, nor is it a large job; but it is just the kind of a job that many a heating contractor falls down on and fails to heat the house.

Only a short time since, in the columns of the new department of "Domestic Engineering" I saw a statement of a party who had written in and said that one of his com-

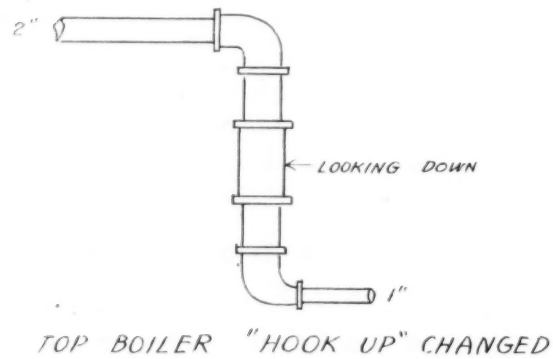



Fig. 2. Showing How the Boiler was "Hooked Up."

petitors had fallen down the last year on five hot-water heating jobs and the owners were of the opinion that stoves or furnaces were better.

I am submitting this little plan from real life not as something which "might have been," but as a sample of a job which has "made good" in a rather difficult place where the chances were, apparently, against its success.

We did not know so much about steam and hot-water heating in those days, and may be this was a "luck job," but I remember that the man who laid it out was kept awake nights a little, while his think foundry was going.

During all the years that this job has been run, less than a five dollar bill will cover the repairs made by the owner who has repacked the steam-valves himself as well as putting in a new rubber in the automatic damper which controls the draft.

This job was not figured low and put in so that we had to "cut corners."

If I remember correctly the boss cleaned up something like $60 for five and one-half days work, and the farmer was mighty glad to get the job and the boss is more and more pleased every year, for if that particular job has brought one it has brought at least thirty others as the direct result of its giving perfect and entire satisfaction in every respect to its owner.

Charles Rigdon, who has been plumbing inspector in Duluth, Minn., for the past four years, has resigned his office and asked that the resignation take effect April 15. It is expected that George Kreager will be appointed as his successor.

Jacob Biebighouser, plumbing inspector at Pensacola, Fla., has handed his resignation to the mayor, to be effective as soon as his successor can be chosen. It is expected that Jack Brandon, the present assistant inspector, will be his successor. The salary attached to the office is $1,500 a year.

## TO ENFORCE PLUMBING CODE AT ALLIANCE, OHIO.

Mayor Speidel, of Alliance, O., has just notified the plumbing trade in that city that the plumbing ordinance, which was passed at the instance of the master plumbers about two years ago, will hereafter be enforced and that violations will be prosecuted.

## PLANS CHANGE IN ROCK ISLAND PLUMBING CODE.

At the meeting of the city council of Rock Island, Ill., an ordinance was presented prohibiting the turning on of water on any plumbing job before the final test by the city plumbing inspector and providing a penalty for violations. The ordinance was considered and laid over for a second reading.

## NEWARK STEAM FITTERS' ANNUAL MEETING.

The Master Steam and Hot-Water Fitters' Association of Newark, N. J., held its annual meeting and dinner at Davis's parlors, Broad St., in that city, on Tuesday evening, Mar. 15. The former officers were re-elected as follows: President, Walter A. Lawson; secretary, Sol Berla; treasurer, Wm. M. Whitlock. The president was authorized to appoint delegates to the annual convention of the National Association which will be held in Atlantic City, N. J., in June, and the committee appointed at the last meeting of the association for the purpose of inducing the Board of Education to place the heating and ventilating contracts direct with the steam-fitters, instead of including them in the general contracts for work on new schools, was instructed to continue its efforts.

## PLUMBERS WANT HIGHER WAGES.

Employing plumbers of Holyoke, Mass., have received notice from the Holyoke Journeymen Plumbers' Union that beginning May the workmen will expect that a different wage and working schedule will become operative. The journeymen want $21 for 44 hours work, the week to end at noon on Saturday.

## NEWS FROM WISCONSIN.

The Brady & Duan Plumbing Co., Watertown, Wis., has been dissolved and in the future the business will be carried on by C. U. Brady.

Frank B. Kuczynski, a plumber at 563 Maple St., Milwaukee, Wis., was recently the victim of burglars, who broke into his shop during the night and stole fixtures valued at $225.

Frank J. Kercher, Manitowoc, Wis., has rented a large building on Buffalo St., to be used as a warehouse in connection with his plumbing business.

N. F. Palen, Sparta, Wis., has enlarged his plumbing shop so that it now occupies a great part of the floor space of the building. M. Reisinger, who formerly conducted a tinning shop in the same building, has moved to West Oak St.

The New Richmond Hardware and Plumbing Co., New Richmond, Wis., has filed articles of incorporation with the secretary of state. The capital stock is $10,000. V. H. Armstrong, A. D. Armstrong and H. O. Shern are the incorporators.

The plumbing firm of Polacheck & Johnson, West Allis, Wis., is now occupying its new building, recently completed, on Greenfield Ave., between 67th and 66th Sts. The building is 54x24 ft., and was erected at a cost of $7,500.

P. A. McQuillan, Ladysmith, Wis., has opened a plumbing shop in the Journal building on Miner Ave. The building has been completely remodeled so that his stock of goods can be accommodated.

Mike Hess, Grand Rapids, Wis., formerly with the Centralia Hardware Co., will open a plumbing business on the west side in that city.

R. T. Royston, Madison, Wis., formerly with the firm of Trask & Royston, has removed his shop from 1329 University Ave. to the new block at 1305 University Ave.

# QUESTIONS AND ANSWERS

## FURTHER COMMENT ON "WAIT A MINUTE."

Editor "Domestic Engineering":—I have read with much interest the article in your issue of March 12th, containing the contribution by A. R. McGonegal, Inspector of Plumbing, Washington, D. C. Some time ago I applied to his office for permission to place a 4-in. X X sewer in place of a 5-in. X X sewer for an installation in the suburban part of our "Lovely City." Mr. McGonegal said in the article referred to "the fact yet remains that within every city whose sewer history dates back many years, there are a large number of both public and house-sewers that are in a more or less filthy condition * * * on account of insufficient flushing facilities, vegetable and animal matter is held and completes its putrefaction there to the possible undermining of health of the tenants, and the consequent inability to ward off any disease germs."

You know that if you read any of the daily papers from our city that we are making germs to order. It will interest plumbers throughout the country to know that plumbers in our city are compelled to run in a 5-in. X X sewer to take in one down-spout, yard closet, cesspool in yard, also sink. The houses are just one or two stories without gutters or down-spouts to sewer outlets to same. The lots are 30x110 ft., and the job I asked permission to use a 4-in. sewer on is for the most part devoted to farming purposes. I have had no reply so far.

The building law for the District of Columbia has the following provisions bearing on this point:

**Table of Sewers.**

| Area of Lot to be drained. Sq. Ft. | Inside diam. of sewer iron pipe | Fall |
|---|---|---|
| 599 | 3 inches | ½ inch |
| 500 | 3 inches | ½ inch |
| 500 to 2,500 | 4 inches | ¼ inch |
| 2,500 to 4,500 | 5 inches | ¼ inch |
| 4,500 to 7,000 | 6 inches | ¼ inch |
| 7,000 to 10,000 | 7 inches | ¼ inch |
| 10,000 to 15,000 | 8 inches | ¼ inch |
| 15,000 to 25,000 | 10 inches | ¼ inch |
| 25,000 to 40,000 | 12 inches | ¼ inch |

"Yard drains shall not be connected with less size than 4 inches. In suburban conditions, when the lot consists largely of sodded or cultivated surface, the use of a smaller sewer than required above may be authorized by the Inspector of Plumbing; but no such house sewer shall be less than 4 inches."

I think that for said work the 4-in. X X sewer would be the proper size—and may I ask the trade all over the country if I am right? Is it not the general opinion that the 4-in. X X will be flushed better and keep in finer condition than the 5-in. X X with the above number of fixtures? If the same rules laid down by the plumbing office of the District of Columbia were used on some of the suburban farms of other cities they would no doubt have to lay some new trunk lines there.

Washington, D. C. Henry J. Allen.

## QUESTION ABOUT SIZE OF BOILER.

Editor "Domestic Engineering":—We write to ask your opinion as to the proper size or capacity of a horizontal tubular steam boiler that would be required to furnish steam for warming 450,000 gallons of water easily to the temperature of 50 deg. with the mercury at 20 deg. below zero. This water is held in an iron tank 56 ft. 4 in. in diameter and 24 ft. high, standing out entirely exposed to the weather from top to bottom.

We enclose sketch (Fig. 1) showing this tank which is used as a gas holder. The upper tank rising and falling into the larger one which is filled with water to form a seal. Of course, there is no change in this water as none is drawn off so that after being once heated all that

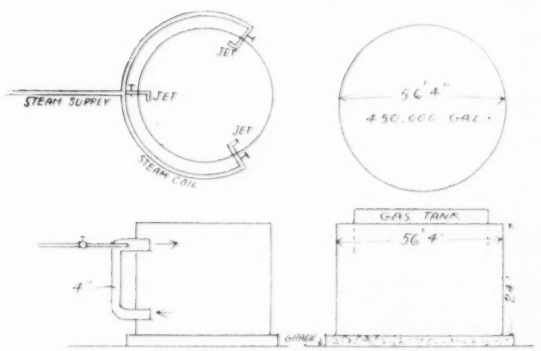



Fig. 1. Suggested Arrangements for Heating 450,000 Gal. Water.

is required is to maintain it without heating any fresh supply to speak of. The bottom of the tank stands on a concrete base level with the regular ground grade. We would like your advice as to proper size of boiler to furnish steam to do this work easily carrying from 20 to 40 lb. pressure.

We also show on this sketch two systems of delivering the steam into the tank so that it may be as evenly heated as possible that has suggested themselves to us, one taking a 4-in. pipe-loop as shown in elevation from the bottom of the tank and returning it into the tank say 10 ft. above with a 1-in. steam-pipe carried into the top tee reduced to a jet; the other system is illustrated in the ground plan showing a circular pipe following the tank on the outside diameter with three jets passing through the tank into the water with nozzles pointing in the same direction to force a circulation around the tank with the steam jets, this outside coil to be placed about two inches above the bottom of the tank.

Omaha, Neb. B. C. J. & C. S.

We should like to receive comments on this job from some of our readers before we publish our answer to this question.

Or better still, we would be glad to get a description of a system of this kind by some contractor, who has solved such a problem successfully.

## QUESTIONS C. N'S. SICK JOB.

Editor "Domestic Engineering":—In the sketch (Fig. 2), submitted by C. N.," Pittsburgh, Pa., in your issue of March 19th, something is evidently wrong. Perhaps your artist slipped up or else "C. N." didn't draw what he thought he did, or perhaps he failed to express properly what he had.

I can make no sense to his run of pipe as given on the left hand side of the boiler. He starts out with a run from top of boiler and on a branch or horizontal run

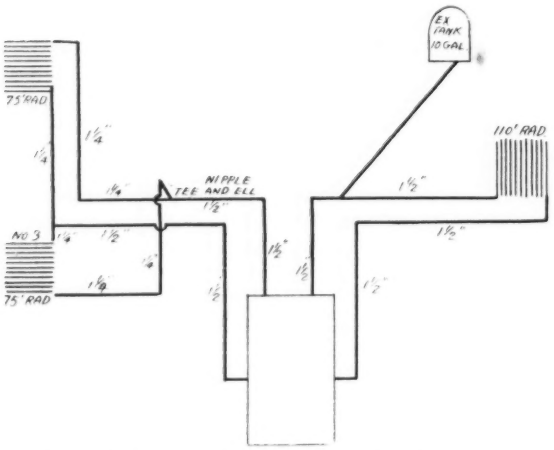



Fig. 2. C. N's. Job, in Which Radiator No. 3 is Air-Bound.

seems to take another branch with a cross over. This branch runs into the return end of radiator No. 3. Now from bottom end of radiator above No. 3 the return drops, and from a tee part of the return water is supposed to find No. 3, while the rest returns to the boiler. In other words, according to this layout, radiator No. 3 is fed at both the supply and return end only perhaps more strongly at the return end.

If I have deciphered this Chinese puzzle correctly there is no wonder that No. 3 becomes air-bound and the wonder is that any heat got through at all. I'd like to hear from some others on this point.

Chicago. D.

## HOW IS THE CAPACITY OF HOUSE-HEATING BOILERS FIGURED?

Editor "Domestic Engineering":—Can you give me a line on any information regarding the manner of figuring the heating capacity of a house-heating boiler?

St. Paul, Minn. N. P. R.

This involves a question which has not been entirely settled as the ratings of manufacturers differ somewhat.

In answering this question we shall base our remarks upon the information contained in "Principles of Heating," by William G. Snow, who says that "in house-heating boilers of medium size not more than 5-lb. of coal should be burned per sq. ft. of grate surface per hour." He then states that in order to find out the size of boiler necessary to supply a given amount of direct radiation, for example, 1,500 sq. ft., including everything, multiply the total surface by the heat given off per sq. ft. per hour. With hot water, in this particular case, this would be 1,500x150= 225,000 heat units. Now figuring that 8,000 heat units are utilized per pound of coal burned, each square foot of grate, with a five pound rate of combusion, will give to the water in the boiler 40,000 heat units per hour. Therefore the grate-surface required will be 225,000÷40,000 or 5.62 sq. ft.

King, in his work on "Heating and Ventilation," states that in the locomotive fire-box type of heating boiler, the ratio of grate to the steam radiation capacity is from 1 to 190 in the smaller sizes and from 1 to 275 in the larger sizes which means that for each square foot of grate, 190 to 275 sq. ft. of steam radiation is figured.

## A CHAMPION FOR CEMENT.

Editor "Domestic Engineering":—I noticed in your issue of March 12 that A. J. Deer, Pittsburg, Pa., says that cement expands to such an extent that to set a closet-bowl with it will result in the breaking of the bowl every time. He then immediately acknowledges that he is making a statement of which he has no proof for he says that he has never been willing to make the experiment. The use of cement for setting closet-bowls has long since passed the experimental stage. It has been used for this purpose for years and is perfectly successful. I have never known of a closet-bowl having been broken by such setting and have used it for several years with entire satisfaction. Yours very truly,

Warrensburg, Mo. Oll Miller.

## ON CLEANSING AIR.

Editor "Domestic Engineering":—Would a filter of cotton cloth placed over the intake of a cold air flue to an indirect radiator be of any assistance in cleaning the air before it entered a residence? Please answer in your next issue.

Albany, N. Y. Y.

We should say that it would be of no permanent benefit. It probably would help things for a short space of time, but it would soon become so stopped up that it would have to be changed and probably as often as once each day.

There are various air-washing devices on the market designed for the purpose of filtering the air and this is accomplished in a most effective manner by various systems. We suggest that you visit some of the large public buildings in a large city and observe such apparatus in operation.

## RULE FOR FINDING SIZE OF STEAM MAINS.

Editor "Domestic Engineering":—What rule do you use when you want to figure out the sizes of steam mains? Please give me one that is easy and practical.

Minneapolis, Minn. L. G.

This is a question on which very few heating engineers agree.

Various rules are given by numerous authorities, but here is one which the writer has tried out for himself and notwithstanding some parties have objected, we shall give it again because it has always served our purpose. Here is the rule:

The square of the diameter multiplied by 100 will give the number of feet of radiation which the pipe should carry under ordinary circumstances and not too long runs. Thus: The square of a 2-in. pipe is 4 which multiplied by 100 gives 400.

"Domestic Engineering" has for sale a book called "Sizes of Flow and Return Steam-Mains" (price 50 cents) which you will find very interesting reading as the subject is fully discussed there by some of the best practical men in the country.

## AN UNUSUAL QUESTION.

Editor "Domestic Engineering":—In a car of recently imported Swedish iron, entering this country through the custom house at Baltimore, and reported by the inspector to weigh 450,000 lbs., shipped by rail in open flat cars to Chicago, received here by the consignee and reweighed by the customs inspector the difference between Baltimore and Chicago weights—both weights being verified as correct, was 132 lbs. shrinkage.

The total number of pieces of iron tallied in count, showing that there was no loss in pieces.

Please state how the difference in weight can be properly accounted for. Assuming that a large percentage of the loss occurred by abrasion there is yet a very considerable percentage chargeable to oxidization. What was the chemical reaction, and what other loss can be accounted for chemically. G. P. S.

Perhaps some our readers can suggest the solution.

## HOW TO PREVENT CRACKING OF CLOSET BASES.

Editor "Domestic Engineering":—I have been an interested reader of a number of letters which appeared in your correspondence columns recently, inquiring how to prevent closets being broken by a settlement of the walls of the building or of the soil stacks, or a shrinkage of the floors. "Euclid" stated that within two or three years he had many closet bases cracked, and wanted to know the reason why and how to prevent a repetition of the damage.

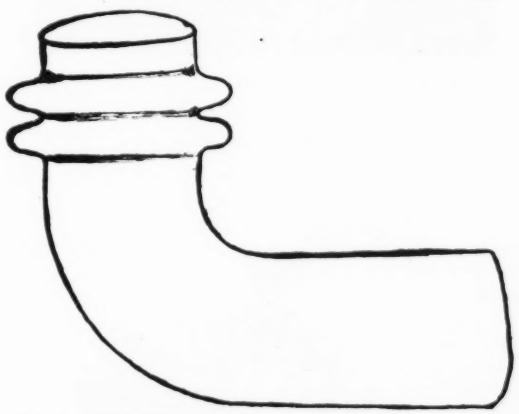


Fig. 3. Bend Which Prevents Cracking of Closet Base.

The trouble is, there is too much rigidity in the installation of drainage systems, at least in the connecting of water closets and slop sinks to the soil pipe. In every building there is a perceptible shrinkage of the floors and walls, as they dry out, and no provision is made for this shrinkage. Again, every building settles more or less and no provision is made in fitting up closets to compensate for the settlement. Further, in tall buildings, secure the stacks as you may, there will be some settlement or sway to them.

As to the remedy, if "Euclid" and others will use flexible bends, similar to the enclosed sketch, which can be purchased of any plumbing supply house, they will have no further trouble from closets breaking. These bends are made with corrugations so that in case of shrinkage or settlement of the floors, the corrugations fold together without damage to the fixture; while, if the stacks settle, the corrugations open out like the folds of an accordion, without sufficient stress having been put on the closets to break or otherwise affect them. If, for any reason, the stack of soil pipe should swing to one side, the corrugations of the bend will close on one side and open on the other without damage to the closet or to the bend.

Straight pieces of pipe with flexible corrugations may likewise be had for use where bends are not required, and if plumbers will adopt flexible bends in all of their practice, they will have no further trouble with broken closets. Yours very truly,

Philadelphia, Pa. J. J. Cosgrove.

## DO PLUMBERS USE FORCE-PUMPS?

Editor "Domestic Engineering": The other day I read in a trade paper a statement by a Chicago sanitary inspector to the effect that "the force pump as a remedy for obstructed pipes is only a makeshift in the hands of a 'handy' man. A mechanic never uses one."

"Sanitary inspection" does not seem to give much opportunity for close observance of working conditions. I have been connected with plumbing supply houses for years and have seen over 40 force-pumps shipped in one afternoon and every one of them to plumbers, not to "handy" men. Perhaps the inspector means to assert in a round-about way that plumbers are not mechanics. Maybe so, but it is also a sure thing that sanitary inspectors are for the most part 180 deg. away from being plumbers. Any device that will remove an obstruction quicker than those in ordinary use or displace a long and tedious operation is used by the up-to-date plumber. Yours truly,

Chicago. A. S. Ollwright.

## MISCELLANEOUS NEWS.

Napoleon J. Beaudin, formerly in the employ of H. E. Pease Co., Spencer, Mass., is to go into the plumbing and heating business on his own responsibility in that town shortly. He will open a store on Mechanic St.

Hageman & DeVoire is the style of a new heating and steam-fitting firm which has opened an up-to-date establishment on Roberts St., Fargo, N. D.

The Frazer Heating & Ventilating Co., Steubenville, O., has moved its establishment from North Fifth St. to 208 Market St.

A. J. Potts & Co., St. Peter, Minn., have been awarded the contract for remodeling the steam-heating plant at the St. Peter state hospital. The consideration is in the neighborhood of $32,000.

J. J. O'Keefe has opened a modern plumbing establishment at 420 Mulberry Ave., Muscatine, Ia.

W. S. King has opened an up-to-date plumbing and heating establishment at Lonoke, Ark. He would like to receive catalogs from jobbers and manufacturers of plumbing and heating goods.

Geo. H. Wiedner, Frederick, Md., has been awarded the contract for the installation of a vapor-heating system in the new National Bank Bldg.

The Cleland-Peck Co., Lynchburg, Va., has been incorporated with a capital of $25,000 to conduct a plumbing and heating business. The officers of the company are: E. A. Cleland, president; W. T. Peck, vice-president; J. R. Cleland, secretary and treasurer.

# Special Equipments Afford Opportunity to Business-Seeking Plumber

Some individual whose breakfast had disagreed with him wrote "Opportunity knocks but once at your door." This statement has often been quoted with ill effect, for its influence is as likely to be retroversive as progressive. The experience of business men gifted with clear vision is that the world abounds in opportunities every day. It is quite true that the opportunities of yesterday have gone from us. There remain, without doubt, the opportunities of today and those of a thousand more tomorrows.

The old-time plumber whose notion was that his horizon of business was bounded by the connections to the kitchen-sink and the house-drain, must as surely pass away as the cave-man has disappeared, before progressive ages of better equipped and broader minded men.

The word "plumber" will be a misnomer for the business man who does plumbing in the future, for plumbing will be a part of his business and not the whole of it. Such is the case with many of the leading business men in the trade at the present time, who are wide-awake to the opportunities such as are outlined in this article.

We offer these three or four illustrations of new things in sanitary ware and appliances. The illustrations for these were furnished to us by the courtesy of James B. Clow & Sons, Chicago, who have just furnished fixtures

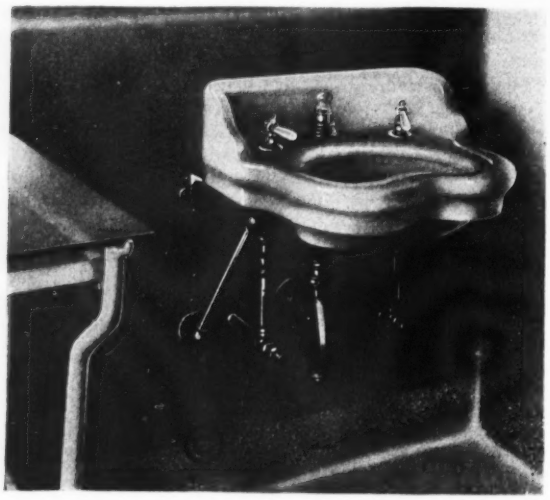


Fig. 1. The "Adamantose" Lavatory.

for an installation of which these form part in the new Cook County Consumptives Hospital, Chicago.

Fig. 1 shows an "Adamantose" lavatory. This lavatory derives its name from the exceptional strength of the material of which it is composed. It is crescent-shaped and its inwardly projecting edges are noteworthy, being designed to prevent the splashing of the water. The water comes out under the rim and passes through an integral water-box, which acts as a mixing chamber. This enables the water to be delivered into the bowl at any temperature desired. The crescent shape of the bowl, it is claimed, requires less water consumption, and its shape accommodates itself better to the washing act.

Fig. 2 is an illustration of a slop sink with a flushing rim and a separate delivery for clean water, the piping being so arranged as to supply the drinking faucet and the flush in combination.

Fig. 3 shows a sterile cup for hospital use, or for any public institution such as schools and any public halls,

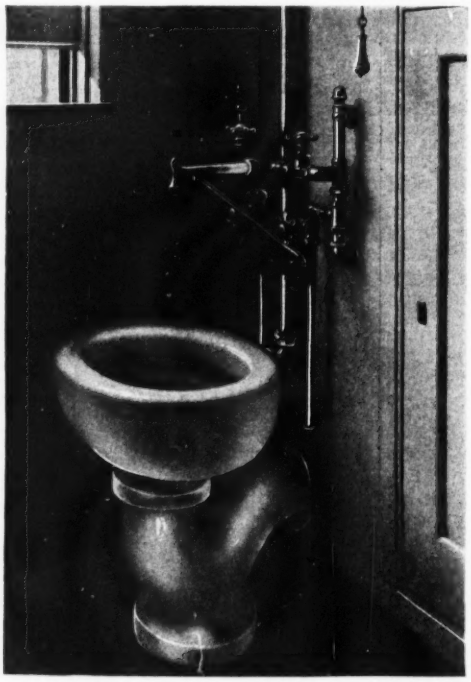


Fig. 2. Slop Sink with Flushing Rim and Separate Delivery for Clean Water.

where any contamination by contact is comparatively easy. This is made of brass, nickel-plated, and its appearance

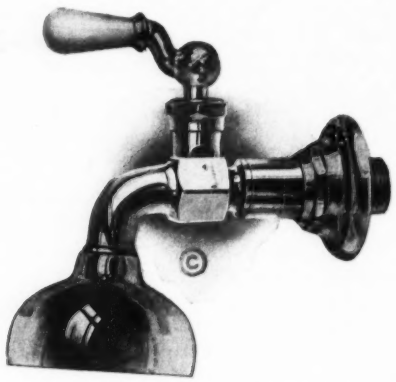


Fig. 3. Sterile Cup for Hospital Use.

and efficiency commend themselves to the practical sanitarian.

Fig. 4 is interesting as it illustrates a type of bath wherein the user can indulge in the Turkish delight of a Turkish bath. We have been to Turkey and are fully convinced

that the Anglo-Saxons have stolen all the Turkish baths from that country.

This new bath is called "Veronica"; perhaps the name of the lady model? The Turkish feature of the bath is secured by means of a hinged cover, light in weight, and presented in German silver nickel-plated, painted white enamel or galvanized as desired. We have at last discovered why the bath is called Turkish; because it is productive of hot members. This is copyright.

The object of this short article is to place before our

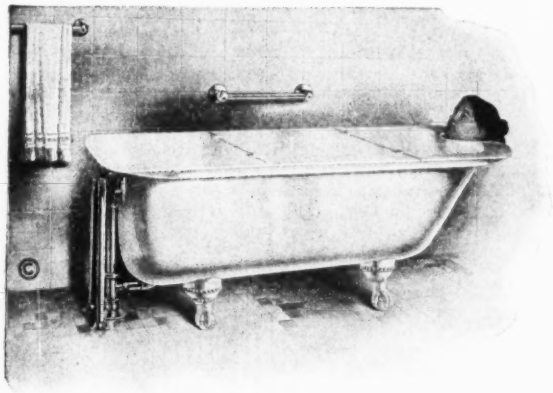


Fig. 4. The "Veronica" Bath-Tub.

readers the possibility of the sale and installation of any of these devices in their locality. Some up-to-date doctor may be attracted by the sterile cup. A local sanitarium may desire a new lavatory. Doubtless in many of the fine residence-homes being installed, a Turkish-bath attachment might be viewed with favor. To the plumber belongs the spoils. There are hundreds of sanitary accessories manufactured and supplied by advertisers in "Domestic Engineering," that could be installed by the plumber if he would make it his business to study their adaptation to local needs. Manufacturers will be glad to supply the aggressive business-seeker with photographs and clear descriptions which will enable him to attract his customer to purchase, install and use the articles in question.

## A FEW DONTS FOR PLUMBERS.

In the current issue of the "Journeyman Plumbers, Gas and Steam-Fitters' Journal" we find the following pithy paragraphs by Joe Malon, bearing on the relation between the master plumber and the plumbing inspector, which will probably be read with interest by some of our readers.

Don't think because the inspector finds the defects in your work that he is your enemy. If the defects were not there he could not find them.

Don't think the ordinance is gotten up merely to give you a means of holding up your customers. It is gotten up on the latest scientific principles for the protection of the public health.

Don't get the idea that the inspector is your enemy. He prefers to be your friend if you help him by doing your work in a workmanlike manner and strictly according to the ordinance. He will help you by approving it and will not be afraid to recommend you as a reliable mechanic if occasion arises.

Don't try to hide the defects in your work and then think the inspector has a grudge against you if he finds them. It is his duty to find defects if there are any.

Don't imagine the inspector is letting the other fellow off easy and giving you the worst of it. Do your work right and then you will be in a position to demand that the other fellow be made to do the same.

Don't take work at prices so low that you cannot do an honest job. Every honest man is willing to pay a fair price for an honest job. Let the other fellow deal with the other kind and he will soon get tired.

Don't blame the inspector if you lose money by reason of having to do your work according to the ordinance. Remember that the inspector did not put the price on your work and it is his duty to enforce the ordinance regardless of cost.

Don't spend all your time searching for a poor job to imitate. Find the best piece of work you can and then try to do a better one.

Don't spend all your time inspecting the other fellow's work. Inspect your own work, find all the defects and have them rectified before the inspector comes. You ought to be ashamed to let him see that you have done defective work or used defective material.

Don't ask the other fellow to interpret the ordinance for you. He is liable to mislead you. If you do not understand, go to headquarters. The inspector would much rather advise you rightly than order work changed after it is done.

Don't call for the inspector when you know your work is not right, just to see if he will pass it. That is equivalent to asking him to shoulder your mistakes, and besides, it wastes his time and yours.

Don't tell your customer that you and the inspector do not get along. They might ask him why, and he might tell them.

Don't tell your customers that the inspectors are discriminating against you. Most people prefer to have their work go smoothly. They might prefer to have a plumber against whom the inspector can find no grounds for discrimination.

Don't imagine because the ordinance of this city differs from that of other cities in which you have done work that it is all wrong. This city has its own ordinances, and inspectors to enforce them. There is nothing to stop you from going back to the other city. "When you are in Rome do as Romans do."

Don't tell your customers that the ordinance is wrong in its requirements, and that a great many things in it are unnecessary and only there to make work for plumbers, and then continue to work under it. That shows a weak and dishonest disposition. They will wonder why you don't quit robbing them and go into some more honest business where your conscience will not hurt you so much.

## NOTES FROM SAN FRANCISCO.

W. S. Snook & Son, San Francisco, have taken a contract for the plumbing work on the Ede Bldg. on Market St., near Seventh. The contract amounts to $1,500.

The Robert Dalziel, Jr., Co., San Francisco, has just been awarded the contract for making additions and improvements to the ventilating system in the basement of the Monadnock Bldg., on Market St., near Third. An immense restaurant is to be located here necessitating the change. The work is to cost $2,143. Changes will be necessary in the plumbing system in the basement and a large amount of kitchen work will be done.

Frank J. Klimm, San Francisco, Cal., has just secured contracts for plumbing work in two buildings that are being erected by the Herman Investment Co. He has also secured the contract for the plumbing work in an apartment house at Clay and Hyde Sts., at $2,732. Work is to be started soon on a contract for the plumbing of an engine house on Baker St., a $1,298 contract.

# Among the Wholesalers

## ARE BUILDING ADDITION TO PLANT.

The Wolverine Brass Works, Grand Rapids, Mich., are at present making an addition of about 4,000 sq. ft. floor space to their plant. This is done by raising a part of their plant an extra story and enlarging the shipping-room by connecting it with other buildings. The doubling of the plant, which has been under consideration for some time, has been put off at least until the latter part of the year.

## MOVES ITS GENERAL OFFICES TO SHIRLEY, IND.

The Shirley Radiator & Foundry Co. has just issued notice to the effect that it has moved its general offices from Indianapolis, Ind., to its plant at Shirley, Ind. The company expects that this move will be of advantage to the trade in saving time in shipments and in the general transaction of business. A new traction line between Indianapolis and Shirley will start operation May 1 and establish hourly service between these two points.

## LARGE ARRANGEMENTS MADE FOR THE EXHIBITION OF PLUMBING AND HEATING GOODS AT THE 28TH ANNUAL CONVENTION OF THE N. A. M. P. IN CHICAGO.

It has been definitely decided by the local arrangement committee to give manufacturers and dealers of plumbing and heating supplies and specialties an opportunity to exhibit their product to master plumbers from all parts of the country who will attend the 28th annual convention of the National Association of Master Plumbers, which is to be held in Chicago June 28, 29 and 30, 1910. For this purpose the above committee has secured a most attractive and desirable exhibit room on the Mezzanine floor of Orchestra Hall, where the sessions of the convention will be held. This room, which is 33 x 90 ft., fronting as it does on Lake Michigan, has unsurpassed ventilation and light, and on account of its proximity to the convention hall and its accessibility to the delegates, is particularly desirable; in fact, it is without exception the finest exhibit room ever secured in connection with a National

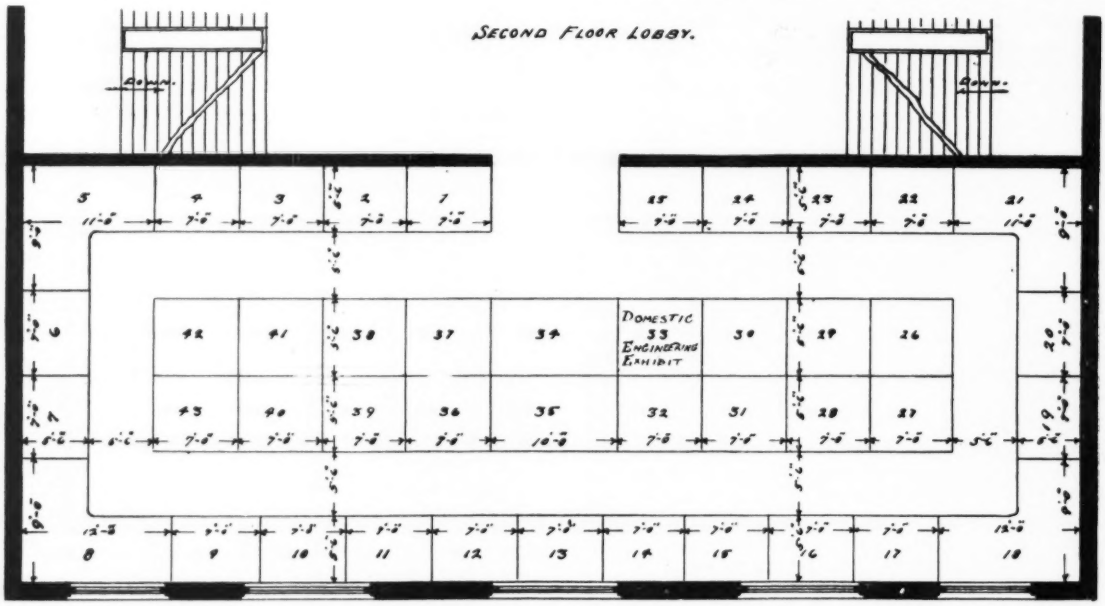



Fig. 1. Diagram of Mezzanine Floor of Orchestra Hall, Chicago, showing spaces in Exhibit Room, which can be Rented for Exhibition Purposes during the Coming Convention of the National Association of Master Plumbers.

## WILL HOLD JOINT CONVENTION IN ATLANTIC CITY.

The executive committees of the American Supply & Machinery Manufacturers' Association and of the National Supply & Machinery Dealers' Association have just decided to hold their next annual joint convention at Atlantic City, N. J., on May 11, 12 and 13. The headquarters of the convention have not yet been decided upon but this will be arranged within a few days.

## A NEW STEAM AND MILL SUPPLY HOUSE AT PITTSBURG.

The Chandler-Boyd Supply Co. is the style of a new concern which will be ready for business at the Terminal Warehouses, Pittsburg, Pa., on April 15, 1910, with a complete stock of iron and brass-pipe fittings and valves, wrought-iron pipe and steam specialties. The new concern has been appointed special jobbers of the Pittsburg Valve & Fittings Co's. products in the Pittsburg district and will carry in stock a large and varied assortment of "P" fittings for immediate shipment at all times. A large stock of black and galvanized wrought-iron pipe will also be carried with facilities for cutting to length when required. S. M. Chandler is president of the new concern and Marcus Boyd is vice-president.

convention. In addition to this space, the committee has also secured a room in the basement for the accommodation of all heavy exhibits of machinery which manufacturing firms may desire to place on display. This room also has exceptional advantages in the way of light and ventilation.

The accompanying diagrams show the dimensions of the exhibit rooms and the size of each space. The rate for exhibit space on the Mezzanine floor is $75, except spaces No. 5, 8, 18, and 21, the rate for which is $125, and space No. 34 and 35, which are $150 each. The rates for space in the basement are $65 each. On account of the high-class nature of the building, exhibits of heavy fittings, large heaters or machinery, will not be allowed on the Mezzanine floor and must be located in the basement. In each exhibit space the committee has arranged to provide a table 5 ft. 6 in. and two chairs, although if any exhibitor requires a larger table, and advises us to that effect, the committee will have it built for him at cost, the only expense to exhibitor being the difference in price between the regulation and special size table. The convention hall is on the ground or main floor as shown. The Mezzanine floor space is on second floor with two large stairs from convention hall. The entrance to base-

ment from convention hall and from street is by ample stairs.

On account of the limited amount of space at the committee's disposal, it has decided to give the choice of space to firms intending to exhibit in the order in which their applications are received. The arrangement of the room, however, is such that all exhibit spaces are equally desirable, although firms wishing more than one space can be accommodated, it being understood that no part of the space will be sub-let and that concerns renting space will exhibit only such articles as are handled or manufactured by them. Parties who desire to reserve

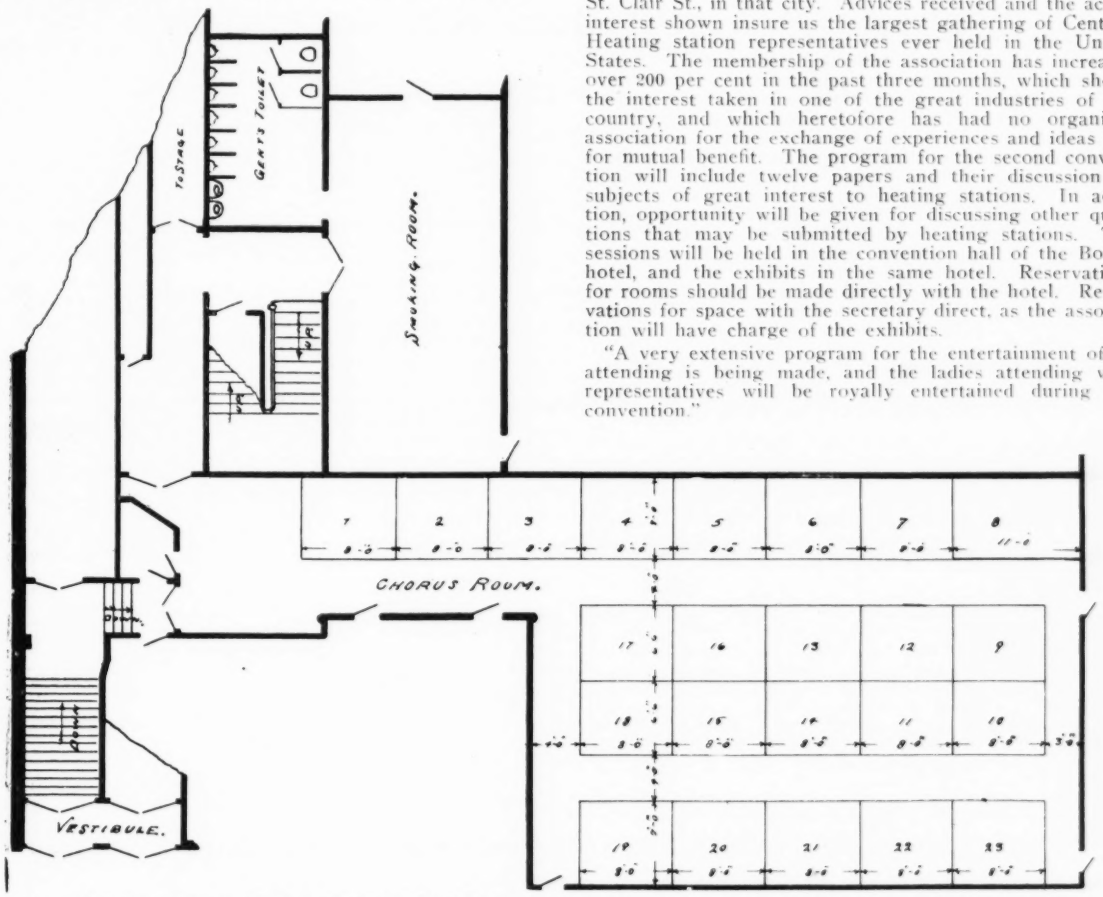



Fig. 2. Diagram of Basement Floor of the Orchestra Hall, Chicago, showing spaces in Exhibit Room, which can be Rented for Exhibition Purposes during the Coming Convention of the National Association of Master Plumbers.

space at this convention which it is anticipated will be the largest in the history of the National association, will, no doubt find it wise to do so at once. It is the committee's intention to make the exhibits an attractive feature of the convention and firms taking advantage of this exceptional opportunity of securing the attention of the representative plumbers of the country, will no doubt find it a most profitable investment. In order to secure space it will be necessary when making reservation to forward 25 per cent of the cost of same, the balance to be paid not later than May 1st. All communications with reference to space should be addressed to Paul Redieske, chairman, Exhibit Committee, 718 Schiller Building, Chicago, or to Secretary Peter M. Munn, also at that address. The members of the Arrangement Committee are: C. J. Herbert, chairman; E. J. Benning, secretary; Peter M. Munn, corresponding secretary; C. C. Breyer, treasurer; Carl J. Stein, R. J. Powers, Wm. Riedieske, M. J. Corboy, C. A. Dreier, P. Nacey, Thos. Hanley, J. G. Weber, J. E. Baggot, M. L. Mandable, Chas. Hulbert, John Degnan, D. J. Hickey, C. J. Boyd, A. W. Wills, Stanley Loula, P. M. Murphy, Wm. Downs, E. C. Wagner, Chas. T. Byrne and Paul Redieske.

## THE SECOND ANNUAL CONVENTION OF THE NATIONAL DISTRICT HEATING ASSOCIATION.

A. C. Rogers and D. L. Gaskill, of Toledo, O., president and secretary, respectively, of the National District Heating Association, have just issued the following formal call:

"The second annual convention of the National District Heating Association will be held in the city of Toledo, O., on Wednesday, Thursday and Friday, June 1, 2 and 3, 1910. The headquarters will be at the Boody House, on St. Clair St., in that city. Advices received and the active interest shown insure us the largest gathering of Central-Heating station representatives ever held in the United States. The membership of the association has increased over 200 per cent in the past three months, which shows the interest taken in one of the great industries of our country, and which heretofore has had no organized association for the exchange of experiences and ideas and for mutual benefit. The program for the second convention will include twelve papers and their discussion on subjects of great interest to heating stations. In addition, opportunity will be given for discussing other questions that may be submitted by heating stations. The sessions will be held in the convention hall of the Boody hotel, and the exhibits in the same hotel. Reservations for rooms should be made directly with the hotel. Reservations for space with the secretary direct, as the association will have charge of the exhibits.

"A very extensive program for the entertainment of all attending is being made, and the ladies attending with representatives will be royally entertained during the convention."

## ANNUAL MEETING OF CHICAGO BRANCH OF N. M. T. A.

The annual dinner and meeting of the Chicago Branch of the National Metal Trades Association was held at the Mid-Day Club, Tuesday evening, March 22, 1910. Over a hundred members and invited guests were present on this occasion and after the dinner the prescribed order of business was followed. An address of welcome was delivered by President O'Leary, in which he dwelt particularly on the sound condition of the branch, numerically and financially, emphasizing the work accomplished during the year in the development of the cooperative course for shop apprentices in conjunction with Lewis Institute. The president then made a formal announcement of the encouragement in this work received from LaVerne W. Noyes, president of the Aermotor Company, in his offer to pay the tuition at the Institute of deserving boys who might enter this course, up to the number of two hundred, or, in other words, up to ten thousand dollars per annum. By a rising vote, the thanks of the association were tendered to Mr. Noyes for this very substantial gift. President O'Leary then spoke of the latest step in instituting

insurance for employees under a special contract with the Phoenix Preferred Accident Insurance company of Detroit, whereby the benefits to the men were increased from 40 to 100 per cent over and above what it would be possible for them to receive as individual insurers. One special feature embodied in the plan is that of free medical service for both accident and sickness. A plan was touched upon for more frequent meetings during the coming year.

Secretary Blatchford's report showed that during the past year labor difficulties had been few and far between.

The officers and executive committee elected for the ensuing year are as follows: President, John W. O'Leary of A. J. O'Leary & Son Co.; vice-president, W. L. Kroeschell of Kroeschell Bros. Co.; treasurer, L. C. Walker of Aermotor Co.; secretary, Paul Blatchford, 1524 Tribune Bldg. Executive committee: H. H. Latham, Frank S. North, Staunton B. Peck, Louis E. Burr, A. T. Simonds, and F. H. Blanding.

Following the business session, the following addresses were delivered: "Co-operative Course for Shop Apprentices," by George N. Carman, director of Lewis Institute; "Employees' Insurance," by L. O. Chatfield, president of Phoenix Preferred Accident Insurance Co., Detroit; "Legislation—State and Federal," by Hon. William E. Mason.

From the many expressions of those attending the meeting, it was voted not only one of the largest ever held by the Branch, but one of the most interesting and successful.

### COMMENCE ERECTION OF LARGE PLANT.

The Anderson Forge and Machine Co., Detroit, Mich., has just commenced the construction of a new plant on Jefferson Ave. in that city, where this company recently purchased 13 acres of land. The new plant will consist of 9 buildings, all of concrete construction with one exception. A mile of industrial track will be laid for the handling of the raw material and finished product. The office building will be of brick, 50 x 50 ft., two stories high; the main building will be 320 x 65 ft., two stories; to accommodate the company's forge department four buildings will be erected, two 260 x 65 ft., one 337 x 65 ft., and the fourth 220 x 65 ft. The raw-material building will be 80 x 175 ft.; the power plant building will be 60 x 50 ft., and a "heat treatment" building will be 45 x 65 ft. This new plant will cost in the neighborhood of $750,000, and it is expected to have it ready for operation on July 15, 1910. This company manufacturers drop forgings, gas engines, machinery supplies and plumbers' calking tools. The officers of the company are: President, Russell Alger; vice-president, Fred M. Alger; secretary and treasurer, F. Archer Hinchman; general manager, W. R. Anderson.

### OBITUARY.

Archie M. Maddock, Sr., president of the Thomas Maddock's Sons Co., Trenton, N. J., died Friday, March 25th, at his home in that city, following an operation for appendicitis. This sad intelligence came as a shock to his many friends in the trade, some of whom recently saw him in apparently good health at the convention of the American Society of Inspectors of Plumbing and Sanitary Engineers.

Chas. D. Addy, vice-president of the Master Plumbers' Association of Pittsburg, Pa., died at his home on Heberton avenue in that city on Saturday, March 19th. He was a member of the plumbing firm of John M. Addy's Sons, and was only in his 44th year at the time of his death. He was born in Pittsburg and spent his entire life there. He belonged to several fraternal organizations and was one of the best known master plumbers in Pittsburg and vicinity. His parents, a brother and a sister survive him.

Wm. M. Brown, for many years president of the Master Plumbers' Association of Brooklyn, N. Y., and until recently vice-president of the Master Plumbers' Association of the State of New York, died at his home in Flatbush, Brooklyn, Saturday evening, March 19th. He was president of the United Plumbing and Contracting Co., and was one of the leading master plumbers in Brooklyn. His wife, a daughter and a son survive him.

# New England Notes

### MASSACHUSETTS.

The Williams Heating and Plumbing Co., New York, has secured the contract for the plumbing work in the new postoffice building at North Adams, Mass.

The town of Framingham, Mass., is considering an appropriation for the installation of a new heating system and new sanitary arrangement in Athenaeum hall. The matter has already been favorably passed upon by the committee of fifteen and a formal vote is all that remains to be taken.

Everett J. Winn, a former member of the board of plumbing examiners and assistant inspector of plumbing in the town of Dedham, Mass., died at his home there March 22 at the age of 51 years. He had recently been chief of the fire department.

Walter C. Flavin, Beverly, Mass., will soon move his plumbing shop from the Appleton block on Wallis St. to the Stevens block on West Dane St., where he will have quarters better adapted to his growing business.

A. T. Ward, Athol, Mass., has been awarded the contract for plumbing and fitting throughout the new building of Lee Bros. in that town.

J. L. Nickerson, Falmouth, Mass., has moved his plumbing business from the Lawrence building to a new store east of the Winslow block.

Whitcomb & Faulker, Palmer, Mass., have been awarded the contract for the installation of a heating system in the new school building at Gilbertville in that town.

Twenty applicants for journeymen's licenses and four for licenses as master plumbers, appeared before the Massachusetts State Board of Plumbing Examiners at a recent examination at Fall River, Mass.

The town of Edgarton, Mass., has voted an appropriation of $1,500 for the installation of a heating and ventilating system in the South school house.

Scott & O'Day, Lowell, Mass., have the contract for plumbing in the new theater which is being erected in Lowell, Mass.

### RHODE ISLAND.

The town of East Providence, R. I., has been authorized by act of the legislature to appoint an inspector of plumbing and drainage and to make ordinances regulating the plumbing and drainage of buildings.

### CONNECTICUT.

John Shea will soon open a new plumbing establishment in Manley's Block, Colchester, Conn.

The Barlow Bros. Co., Waterbury, Conn., has been awarded the contract for the plumbing, heating, metal work, and roofing for T. A. Delowrey's new apartment block to be erected on Central St. in that city. This firm also has the contract for the plumbing for Dr. F. F. Cook's new house on Ludlow St., the plumbing in the Waterbury Country Club's home on Middlebury road, and for plumbing, heating and roofing for R. W. Hampson's new block on West Main St.

Allen T. Spiers has opened an up-to-date plumbing establishment at Lyme, Conn.

### NEW HAMPSHIRE.

M. W. Morgan has just opened an excellently equipped heating and plumbing establishment at 12 Hanover, St. Laconia, N. H.

F. E. Newcomb, Newport, N. H., has secured a large repair contract for the W. H. McElwain Co. at their factory at Merrimac, N. H. He is to make numerous alterations in the plumbing arrangements at the plant. He is also doing a plumbing job in this company's Newport shop. Mr. Newcomb has been established in business there only since last fall and in that time has been awarded many important contracts.

John Bennett, who recently moved from Haverhill, Mass., to Alton, N. H., has opened a tin and plumbing establishment in the latter place. His store is located on School St.

# THE METAL MARKET

## PIG IRON CONTINUES TO DECLINE.

The situation in the iron and steel trade is paradoxical. The demand for pig iron is good, but prices continue to melt away as the snow in the spring time. The steel trade conditions are also good and it is difficult to see the reason for the continued weakness in iron. During the last week another drop of 25 cents has been recorded in Southern iron and sales of No. 2 Foundry for second half delivery have been made at $13.75 Birmingham. The most peculiar thing is a drop in charcoal iron, which rarely fluctuate. This is now $19 Chicago, as against $19.50 for more than a year. The failure of an attempt to form a general selling agency among the coke producers has, of course, had a sentimental effect on the pig iron market, and has a very sharp effect on the coke iron. Furnace coke can be had at $2.10, and 72-hour foundry coke at $2.85 to $3.00. Bargain hunters have been in the market in numbers and some good sales have been made. The producers of these lots were long-headed business men who believed they saw a turn for the better in the market and wished to load up with supplies. This has not only been in the foundry iron market but in the steel making market. Numerous small foundries have likewise made more or less extensive purchases. Prices are as follows:

| | |
|---|---|
| No. 2 Southern foundry, Birmingham | $12.75 to $13.00 |
| No. 1 Virginia foundry, New York | 18.25 to 18.50 |
| No. 2 X Virginia foundry, New York | 17.75 to 18.00 |
| No. 2 Northern foundry, Chicago | 18.25 to 18.75 |

## TIN MARKET DOWN AND UP.

A decline was recorded early in the week and the lowest prices of the year were made at 31.90 cents. Since that time, however, business is improved and sales have been made at 32.20 cents, with the closing of the London exchange on Good Friday, the Saturday following and the holiday character of trading on Easter Monday, there has been very little business here. Before that, however, buyers came into the market and bought quite appreciable tonnages. The tin plate trade is good and there is a good deal of metal going into consumption there. Strange as it may seem, the shortage of the cotton crop is having a slight effect on the tin market. A salt of tin is used by silk manufacturers to add to the weight, "dynamiting" they call it, and owing to the high prices of cotton, silks are in excellent demand, consequently there is more chloride of tin asked for. Requirements for this branch of trade are perhaps not over 1 per cent of the total consumption of pig tin in this country, but to put it in other words, it is about equal to the tin used by plumbers in making wiped joints.

## A WAITING COPPER MARKET.

The copper market is now suffering from a bad and prolonged case of indigestion. Consumption is probably nearer production than any time in three years, but there is such an abundance of metal which was taken out of the ground and sold to speculators that it will not permit of ready assimilation of copper now coming on the market. The remarks made several years ago about undigested securities could be very properly applied to the copper market of today. Prices, it is true, have eased slightly but there is so little business being transacted that these are of little or no importance. Electrolytic can be had at a shade under 13.50 cents, but Lake is fairly firm at 13.75 cents.

## LEAD.

The leading purchasers of lead again lowered its quotation this week and is now selling shipment lead, in 50-ton lots, at 4.50 cents. The outside producers are selling at slightly lower figures or 4.45 cents. Business is extremely quiet.

## SPELTER.

The spelter trade is dull and prices are approximately without change at 5.75 cents New York and 5.60 cents St. Louis.

## NEW YORK METAL MARKET, MARCH 30.

| | |
|---|---|
| Copper, Prime Lake | $13.75 |
| Copper, Electrolytic | 13.45 |
| Lead | 4.50 |
| Spelter | 5.70 |
| Antimony, Cookson's | 8.50 |
| Straits Tin | 32.75 |

## NEW YORK OLD METAL MARKET, MARCH 30.

Dealers' buying prices are as follows:

| | |
|---|---|
| Heavy Crucible Copper | $12.25 to $12.35 |
| Plumbers' cocks and faucets | 9.00 to 9.25 |
| Heavy brass | 8.25 to 8.75 |
| Light brass | 6.50 to 6.75 |
| Heavy lead | 4.00 to 4.10 |
| Tea lead | 3.75 to 3.85 |
| Solder joints | 6.50 to 6.75 |

The situation in old iron shows improvement as far as the demand is concerned. Borings and turnings are very dull. Prices are as follows:

| | |
|---|---|
| No. 1 yard wrought, long | $14.00 to $14.50 |
| No. 1 yard wrought, short | 13.50 to 14.00 |
| Machinery cast | 14.00 to 14.50 |
| Wrought pipes and tubes | 13.50 to 14.00 |
| Wrought turnings | 10.50 to 11.00 |
| Cast borings | 9.00 to 9.50 |
| Stove plate | 11.00 to 11.50 |

## RACINE PLUMBING STRIKE ENDED.

The strike of the journeyman plumbers at Racine, Wis., which continued for several weeks, has been brought to an end through the efforts of Rev. Father Naughton, who was chosen as arbitrator. The result is a victory for the master plumbers, as they will be allowed to employ apprentices wherever journeyman plumbers are employed for twelve months each year.

## STERN "PLUMBER" ORDINANCE PASSED.

Although strongly opposed by all plumbers the Stern "plumber" ordinance has been passed by the city council of Milwaukee, Wis. This ordinance provides for a tax of $1 to be levied against any person who opens a pavement in the city. The matter was before the council for about two months, during which time much pressure was brought to bear upon the councilmen by both friends and enemies of the measure. By the plumbers the law is claimed to be unfair, while those in favor of the act are of the opinion that the ordinance was a necessity as a protection for the pavements of the city.

# PACIFIC COAST LETTER

The San Francisco plumbing trade, both wholesale and retail, is much interested at the present time in the preparations that are being made to hold a world's fair in this city in 1915 to celebrate the opening of the Panama canal. While the plans for the great event are still in the formative stage, the Panama-Pacific Exposition has already been brought to the attention of the nation and the world and the lively interest that is manifested in it everywhere augurs well for its success as one of the most ambitious exhibitive enterprises in history. Primarily the event will celebrate the opening of the Panama canal and will commemorate the discovery of the Pacific ocean by Vasco Nunez Balboa. It will also mark the rebuilding of San Francisco a task that in its present form has excited the wonder and admiration of the world. It will mark, moreover, the dawn of a new era in the commerce of the Pacific, and a prodigious growth of trade between San Francisco and the world. Already direct steamship lines are being planned between this point and the leading European ports via the new avenue of commerce. As a result of these several material changes of international significance which the exposition will celebrate, San Francisco obviously has the co-operation of California, the United States and the world in her undertaking. Plumbers realize that the mere preparing for the great fair will mean an immense amount of work for them, although this is considered to be but a small item compared with the results that will follow the new commercial era. They are assisting the committee having the initial plans in hand as much as possible.

The board of supervisors of San Francisco has been asked to set aside the sum of $100,000 from the funds available for the construction of the salt water fire protection system for the purchase of cast-iron specials needed for that system. About 1,000 tons will be needed.

Work on the new fire protection system for San Francisco is progressing in a satisfactory manner and contracts have been let for most of the work that will be let out. Many of the cisterns are now in place and a number of them are nearing completion. A total of 38,528 pieces of the cast-iron pipe needed have been received and most of this has been tested and accepted. The valves are arriving and as the pumping stations are nearing completion work can soon be commenced on the laying of the pipe.

The Board of Public Works and the Board of Education, San Francisco, have just been allowed $200,000 for the construction of four additional school houses and within a short time bids will be asked for the construction of these.

The William F. Wilson Co., San Francisco, has just secured the contract for the plumbing work in a seven-story and basement class "A" building being erected by A. Satter on Sutter St. near Grant Ave. This contract is valued at $2,980.

Contracts are being let at the present time for the building of the government waterworks system at the Presidio, Cal. The water pipes are to be furnished by Wiers, Pringle, Dunn & Co., for $18,975. The plumbing work that will be needed will be installed by the Runham Plumbing Co. for $588. The work just contracted for including pumps, boilers, and work on the reservoir represents an expenditure of more than $100,000.

The amended building law in San Francisco requiring 20 per cent open space on lots upon which flats, apartment houses and similar places were to be built has been passed by the supervisors and now that this vexing question has been disposed of it is anticipated that plumbing contracts will be more in evidence than they have during the past month or more. The letting of contracts has been seriously interfered with while the discussion in regard to the building law has been carried on.

The Board of Health muddle in which two prominent San Francisco master plumbers are concerned is still in an unsettled shape, and at the present time there are two boards claiming to be in power, each with a plumber on it.

Building operations in Los Angeles have been very heavy during the past winter, almost equalling the record of San Francisco some months. James W. Hellman has contracted to do the work in a seven-story building at 420 South Spring street at that place for $1,197. This building is being remodeled and altered.

Blumve & Jay, Los Angeles, have been awarded the contract for the plumbing work in a residence being erected at Alhambra for W. L. Valentine, the work is to cost $1,891.

The steam heating work, plumbing and ventilating systems in the new seven-story office and theater building being erected at Los Angeles by William M. Garland is to be installed by the Thomas Haverty Co. for $10,350. This concern also has the contract for the plumbing and steam heating work in a three-story office building being erected by Dr. West Hughes, $5,350 job.

The contract for installing the plumbing work in the Union High School at Hollywood, Cal., has been let to J. Hokom, Los Angeles, on his bid of $5,697. The Machinery & Electric Co., in that city, will install the heating and ventilating systems in that building for $14,846.

Robert Pollard, of Los Angeles, has secured the contract from H. B. Ellis for the plumbing work in a residence being erected by the former on Ocean View St. The consideration is $1,141.50.

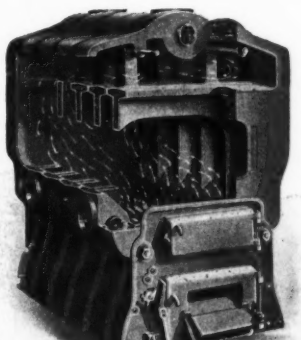
The board of supervisors has awarded the contract for the plumbing work in the new wing being added to the courthouse at San Diego to Rohd Bros. for $914. The steam heating work in the new addition will be done by C. H. Julian, of that place.

Beaumont, Cal., is growing very rapidly and two new plumbing establishments have just been started there, Lee Bros. and McJohnston & Huckins being the new firms.

Whitman & Maxwell, El Centro, Cal., have been awarded the contract for the plumbing work in the new High School building at Holtville, the consideration being $2,040. The heating system will be installed by the Machinery & Electrical Co., Los Angeles, for $2,774.

# No Rule of Thumb

It is not so long ago that the popular manner of hazarding boiler ratings was: "Well I guess she'll stand 1,500 feet." "It's my opinion she ought to carry 900 feet." "I reckon about 1,200 feet is the limit." Etc., etc.—as accurate as the man who carried the door measurements by holding his two hands apart.



IDEAL Sectional Water Boiler.

No "reckons" and "guesses" enter into the ratings of IDEAL Boilers. A uniform, scientific method based on numerous tests under widely varying conditions and under the direction of a highly skilled Department of Research has banished the rule of thumb methods from IDEAL Boiler calculations.

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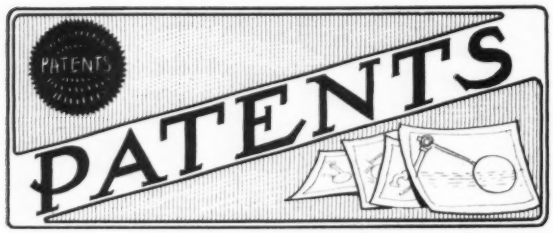



951,795—Strainer for Sewer Traps.—Louis Berwanger, St. Louis, Mo. The claims for this invention are in part as follows: The herein-described strainer for sewer traps, comprising a perforated strainer, a flange depending from the under side of the strainer, there being a shoulder between said flange and the edge of the strainer, and yielding jaws carried by and depending from the flange, the lower ends of which jaws are bent outwardly."

951,813.—Steam-Boiler. Charles W. Hawkes, Chicago, Ill.

951,822—Air-Valve—George Leich, New York, N. Y., assignor to E. W. Bliss Company, Brooklyn, N. Y., a Corporation of West Virginia.

951,855.—Faucet.—William J. Sullivan, New York, N. Y. The entire claim made for this invention reads as follows: "In a faucet, an inlet and an outlet opening, a ball valve located between said openings, held normally closed by the pressure of the water, an adjustable hollow seat below the valve fashioned to receive the ball when the valve is opened, a spring washer sealing the faucet cap, a hollow spindle shaped at the bottom to conform to the contour of the ball-valve and transmitting motion from the washer to the ball-valve, in combination with guide screws for the spindle, substantially as set forth."

951,878—Safety-Valve for Gas-Stoves.—William J. Dolan, Indianapolis, Ind., assignor of two-thirds to Emil J. Schmitt and Frank W. Sharp, Indianapolis, Ind.

951,904—Water-Heater.—Walter S. Bullard, Middletown, Ohio, assignor of one-fourth to James W. See, Hamilton, Ohio.

951,927—Indicator-Post for Valves.—Edwin H. Whitney, Waterford, N. Y., assignor to Eddy Valve Company, Waterford, N. Y., a Corporation of New York.

952,043—Valve.—Eugene W. Hoyt, Decorah, Iowa.

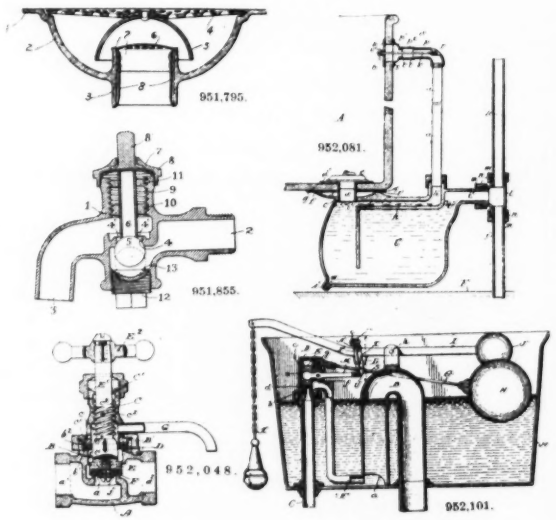
952,048—Water-Cock.—Simon Resek, Cleveland, Ohio. The entire claim for this invention follows herewith: "In a water cock, the combination of a valve body having the usual through passage with right angled valve seat therein, an extension formed on said valve body with a lower chamber bore, a seat or shoulder and a larger bore above it, a screw cap C having an annular flange at its base seated in said larger bore of the extension, a clamping ring engaging said annular flange and screwing upon the extension, a waste chamber formed in the lower end of the cap, an annular washer clamped between the shoulder of the extension and the annular flange of the cap and separating the waste chamber of the cap from the chambered bore of the valve body, a valve screw in the cap, a screwed valve stem, a valve head on the bottom of the stem adapted to loosely fit the chambered bore of the valve body, a reduced portion of the valve block immediately above the head extending through and snugly fitting the washer, a passage along said reduced portion having its respective ends immediately below and above said washer, with an outside drain spout leading from the waste chamber in the cap, all arranged and adapted to operate substantially as and for the purpose herein set forth."

952,053—Pipe-Hanger—George H. Tarleton, West Somerville, Mass.

952,078—Clean-Out Plug.—Charles F. Madden, Green Bay, Wis.

951,081—Trap, Waste and Overflow Pipe Attachment to Bath-Tubs.—Duncan J. McIntyre, Syracuse, N. Y. This invention is described in part as follows: "A trap disposed under the bottom of a bath-tub and formed with its top plate separate from the tub and provided in said top plate with a threaded inlet for attachment to the threaded end of the discharge nozzle of the tub, a horizontal duct formed on the underside of the top plate and communicating at one end with the lower end of the aforesaid nozzle and formed at the opposite end with an upward extension communicating with the overflow of the tub the trap provided with an outlet duct disposed with the bottom of its interior in a line above the top of said horizontal duct, the top plate of the trap being formed with an upwardly projecting rim surrounding the discharge nozzle, and a gasket interposed between the said rim and bottom of the tub as set forth, and said rim provided with a sharpened top edge seated within the body of the member disposed therabove and contacted thereby."

952,101—Filling and Discharging Means for Flush-Tanks.—Theodore Correjolles and John F. Davis, New Orleans, La. This device is described in part as follows: "In filling and discharging means for flush tanks, the combination of a tank, a siphon having an inlet arranged in the tank, means for supplying water to the tank, a valve controlling said supply, a suitably mounted lever provided with a float, a lever connected with the valve and having an upstanding slotted portion receiving the float lever, a transversely swinging latch pivoted on said upstanding portion and having a trip arm and inclined at its inner edge and provided with an abutment at its lower




end, and a suitably supported movable tappet for acting against the trip arm of the latch."

952,117—Pipe-Covering.—John B. d'Homergue, Pittsburg, Pa.

952,187—Valve.—James A. Donnelly, Brooklyn, N. Y.

952,280—Water-Heater.—Frederick J. Ruppel, Cleveland, Ohio.

952,371—Valve for Flush-Tanks and the Like.—Randolph Soles, Ashland, Ohio.

952,416—Pressure Reducing and Regulating Valve.—Jehu V. Chase, Newport, R. I.

949,927. Flushing-Tank. John P. Glannon, Pittsburg, Pa., assignor of one-half to John A. Seiler, Pittsburg, Pa.

949,976. Apparatus for Molding Undercut Lugs On Bath-Tubs. Thomas S. Crane, East Orange, N. J., assignor to McCrum-Howell Company, a Corporation of Connecticut.

950,042. Thermostat. Thomas O. Edmond, Cypress, Ind.

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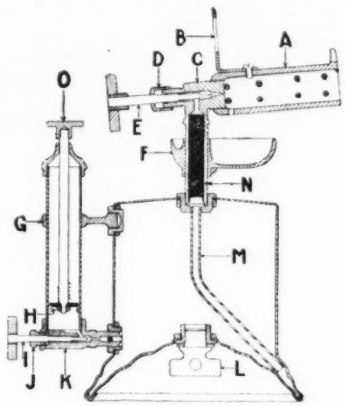
The Ashley House-Sewage Disposal Co., 6515 Normal Blvd., Chicago, has issued a neatly printed booklet, entitled "Sewage Disposal for the Country Home," and containing a well-written article on "How the Ashley System Operates," by Walter H. Harrison, C. E., of Philadelphia.

## PURCHASED THE "CHAMPION" TORCH LINE.

The Turner Brass Works, Sycamore, Ill., has recently added to its large line of blow-torches by purchasing the line of "Champion" torches formerly made by the Acorn Brass Manufacturing Co., Chicago. This purchase includes all patterns and tools and the right to manufacture these torches as well as the good-will of the company.




Sectional View of No. 02 "Champion" Torch.

The accompanying illustration shows one of the styles, known to the trade as No. 02, and it shows the detail of construction.

The history of the Turner Brass Works, in connection with the blow-torch industry, is of considerable interest. They were among the first to manufacture gasoline torches. Later they added the double-jet gasoline torches which are constructed to secure the highest degree of heat from the fuel and produce a temperature about twice that of the ordinary or single-jet styles. These torches are now extensively used for brazing and other work requiring a very high degree of heat. The business of the Turner Brass Works about five years ago purchased the "Hot-Blast" line of blow-torches, furnaces, brazers, etc., from the White Manufacturing Co., Chicago, and with their last purchase of the "Champion" line of blow-torches they now manufacture and sell about 125 different styles of gasoline, kerosene and alcohol appliances.

## GOVERNMENT CONTRACTS TO BE AWARDED.

Superintending Architect James Knox Taylor, Treasury Department, Washington, D. C., will receive sealed proposals as follows:

Until 3 p. m., Apr. 20, 1910, for the construction, including plumbing, heating and gas-lighting systems, of the U. S. postoffice at Greencastle, Ind.

Until 3 p. m., Apr. 25, 1910, for the construction of an extension, including plumbing, heating, lighting and electric wiring of the U. S. postffice at Kansas City, Kan.

Until 3 p. m., Apr. 26, 1910, for the construction, including plumbing, heating, lighting and electric wiring of the U. S. postoffice at Rochester, Minn.

Until 3 p. m., Apr. 27, 1910, for the construction, including plumbing, heating, gasfitting and electric wiring of the U. S. postoffice and court house at Enid, Okla.

Until 3 p. m., Apr. 29, 1910, for the construction including plumbing, heating, lighting and electric wiring of the U. S. postoffice at Newman, Ga.

Until 3 p. m., May 2, 1910, for the construction including plumbing, gas-piping, heating, ventilating and electric wiring of the U. S. postoffice at Lander, Wyo.

All proposals submitted should be in accord with the drawings and specifications, copies of which can be obtained from the custodian of the above postoffice, or from the office of the supervising architect at Washington, D. C.

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First of last winter the janitor let our Capitol Boiler freeze up, and several sections cracked.

It was too cold to take the boiler down and we had to have heat, so we removed the sections on the right side and bricked up the openings. We took the left section and had a piece of iron riveted on it by the boiler maker. We then put gas into the boiler and run it under these conditions the rest of the winter, and take pleasure in stating that the boiler in that crippled condition gave us perfect satisfaction and heated the church for the rest of the winter.

We certainly feel that you ought to have this recommendation on file to show people the enormous advantage to be gained by using a boiler with sections in halves.

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| DULUTH, MINN., | - | Duluth Plumbing Supplies Co. |

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# Classified Advertisements

Advertisements under this heading 4 cents per word per issue, address included. Remittance to be made with order. To insure insertion copy should be received not later than Wednesday morning.

### Situations Wanted

POSITION WANTED—BY HEATING supply salesman; 20 years' experience. Age 40. Address 227, "Domestic Engineering," 323-325 Dearborn St., Chicago.

WANTED—POSITION AS BUYER AND Sales Manager or Branch Manager in wholesale plumbing and heating supply line, by man now employed in similar position on the Pacific Coast. Prefer eastern city. Address No. 261, "Domestic Engineering," 325 Dearborn St., Chicago.

TRAVELING SALESMAN FOR HEATing and Power Plant Supplies is open for an engagement. Has had 15 years' experience. Knows the trade well—from Buffalo to Denver. Address 231, "Domestic Engineering," 325 Dearborn St., Chicago.

WANTED POSITION—A CONTRACTing plumber, having certificate of competency for Greater New York and Yonkers City, 25 years' experience at trade in New York City on the best work, at present finishing up a large job open for inspection to any one, would like to get position as General Foreman in some first-class shop, out of town, doing plumbing and heating. Best New York City reference; will increase, through hustling, any business 25 per cent. Good at estimating, laying out work; handling men and getting the money. Address No. 259, Domestic Engineering, Chicago.

RADIATOR SALESMAN WITH AN EXtensive acquaintance in New York and vicinity would like to make a change this spring. A No. 1 references. Address 265, "Domestic Engineering," 325 Dearborn St., Chicago.

WANTED—A POSITION AS SOLICITOR and estimator with a heating contractor; 15 years' experience on heating work; or would take position as salesman for heating or plumbing goods; experience and extensive acquaintance with the trade in the East. Address No. 266, "Domestic Engineering," 325 Dearborn St., Chicago.

TRAVELING SALESMAN, WHO HAS covered the Pacific Coast for a manufacturer of plumbers' brass goods for several years, would like to make a change May 1. Has a large acquaintance. Address 268, "Domestic Engineering," 325 Dearborn St., Chicago.

SITUATION WANTED—STEADY EMployment by first-class steamfitter. Can design and estimate. No boozer. Best of references. Address, stating wages, No. 267, "Domestic Engineering," 325 Dearborn St., Chicago.

### Help Wanted.

WANTED—SALESMAN EXPERIENCED in selling plumbers' woodwork; state experience and territory covered; also salary expected and references. No. 258, "Domestic Engineering," Chicago.

WANTED—BY A PROMINENT MANUfacturer of Plumbing Fixtures, a representative for New Mexico and Arizona, who is familiar with the trade; preferably as a side line and on commission basis. Address No. 269, "Domestic Engineering," 325 Dearborn St., Chicago.

WANTED—A FIRST-CLASS FOREMAN for old-established Plumbing and Heating business. Must be thoroughly capable, reliable, a hustler, and able to accurately estimate work. A splendid opportunity for right party. Address No. 300, "Domestic Engineering," 325 Dearborn St., Chicago.

WANTED—A TRAVELER ACQUAINTED with the architects' and retail plumbing trade in the Central States. Must have good acquaintance and full knowledge of closet fixtures and other specialties in connection with plumbing supplies. Give references and salary expected. Address No. 301, "Domestic Engineering," 325 Dearborn St., Chicago.

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FOR SALE—COMPLETE PLUMBING and heating library. Write for list of books. Address: 229, "Domestic Engineering," 323-325 Dearborn St., Chicago.

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FOR SALE—PLUMBING AND TINNING business in Ohio town of 7,000; good location; established 20 years; good clean stock; will invoice about $2,500; reason for selling old age. Address No. 260, "Domestic Engineering," 325 Dearborn St., Chicago.

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FOR SALE—PLUMBING AND HEATing business in New Jersey; reason, owner's health; will sell at fair price. Address No. 220, "Domestic Engineering," 325 Dearborn St., Chicago.

FOR SALE—PLUMBING AND HEATing business; eastern part of Iowa; population 5,000; a bargain; owner has other business. Address 223, "Domestic Engineering," 325 Dearborn St., Chicago.

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MAKING THE BUSINESS PAY. Letters of John Burton, retired successful plumber and steamfitter, to his nephew still in business. Practical, instructive, entertaining, a guide to better business. Cloth bound, 5½x7¾ in.; 168 pp. Postpaid, $1.00.

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PLUMBING CATECHISM. Second edition. This book formulates, in question and answer form, the basic principles of plumbing design and practice. It is therefore especially commended to students in engineering and trade schools, and to master and journeymen plumbers, preparing for examinations. Bound in cloth, 6¾x4¾ in.; 125 pp. Postpaid, $1.00.

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